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## THE MONTH

We delay our publication for one day on this occasion in order to include a complete report of the session of the British Pharmaceutical Conference at Plymouth, which only closed last evening, the 15th inst. Professor Redwood's opening address was a highly interesting sketch of the history of pharmacy, and, without special reference, this history brought out very distinctly the early relationship between the druggists and the apothecaries, and the frequent efforts of the latter to check the inconvenient competition of the pharmacists.

A bill has been introduced into the House of Commons by Mr. Isaacs to amend the Sale of Food and Drugs Act, the object of which seems to be to permit the sale of diluted spirits at a proportionately reduced price. After passing through committee the bill was checked on its third reading. Dr. Cameron was its chief opponent.

In the reprint of the British Pharmacopœia, recently issued, an error occurs which it is important should be rectified by those who may have a copy in their possession. In the formula for Liquor Arsenicalis the quantity of Tinct. Lavand. Co. is given as 5 fluid ounces. It should be 5 fluid drachms.

The Pharmaceutical Council has resolved by a large majority to authorise their solicitor at his discretion to defend a member of the society against a prosecution under the Apothecaries Act for counter practice. The confidence in the legality of such practice expressed by Mr. Flux at the annual meeting in May is a guarantee that if the trial should come on the pharmacists may look for a vigorous defence.

It will be noticed that the Irish Pharmaceutical Society have imposed a new condition on intending candidates for registration. All who enter for the examination in Ireland will in future be required to show a certificate that he (or she) has been practically engaged in dispensing and compounding medicines in the establishment of a pharmaceutical chemist or apothecary keeping open shop. The doctors on the council endeavoured, without success, to extend the power of granting certificates to any apothecary dispensing his own medicines.

In another column will be found the conditions of our Botanical Competition. We hope that many students will make a point of competing, and that all our readers will make it known to their pupils.

A correspondent proposes that chemists should cut the ground from beneath the feet of co-operative and cutting traders by uniting and forming associations in each district for the purpose of buying in large quantities and settling the minimum prices for the district.

In the year 1876 there were 5,467 suicides in France, of which 109 were by poisoning. The poison used was generally laudanum.

Mr. Peter Squire, after holding the post for 42 years, has just retired from the office of chemist on the establishment of the Queen. Her Majesty has conferred the office on Mr. Squire's son.

We learn with pleasure that Mr. S. Lloyd Stacey, of the firm of Corbyn, Stacey & Co., 300 Holborn, has recently taken into partnership Mr. H. G. Stacey and Mr. J. Moss. Mr. H. G. Stacey is a Fellow of the Chemical Society, and is the son of Mr. S. L. Stacey. Mr. J. Moss, best known as the examiner in Chemistry to the Pharmaceutical Society, has for many years been manager for the concern he now enters.

A correspondent writes to us on the subject of killing dogs, an occasional and by no means a pleasant part of a druggist's duties. We hope to follow up the subject.

Dr. Day, of Melbourne, again writes to us in reference to his observations in regard to the production of peroxide of hydrogen from essential oils, in which matter he claims precedence over Mr. Kingzett.

Castor oil pills have been the subject of an important trial at Bournemouth, and a conviction against the seller has been obtained. According to the letter of the law the conviction was possibly in order, but a literal fulfilment of legal requirements will probably be attained by combining a little castor oil in the pills until the public is educated out of the misnomer.

A coroner has again given an odd opinion on the Pharmacy Act, based entirely on ignorance. We should think that the Trade Association might undertake the enlightenment of this much-tried body of men.

Mr. Frank Mason, after deliberately and persistently trespassing on the rights of Messrs. Brand & Co. by copying or imitating their labels for essence of beef, has recently been committed to Holloway Prison. We understand that this is for no definite time, but to obtain release he must first pay all costs, and then make application to the vacation judge. The date of his release rests entirely with the latter.

Our "Medical Gleanings" contain this month a curious illustration of life in Ireland. No one would be so foolish as to imagine that such scenes were at all general, but that they should appear at all is a noteworthy fact.

A few queries, which arrived late, or to which we have not yet obtained satisfactory answers, are reserved till next month.

# Pharmacalia.

This is the month of August—a date welcome to the tourist's heart, and to the soul of the tired journalist. Then, exclaims the former, "I will do no manner of work;" then, responds the latter, "I have no work to do." And truly Hope, which has stayed so long in Pandora's box, seems disposed to lift the lid, and to be ready to put in an appearance. For are not our great men about to come boldly to the front, and say so many good things that we shall be saved from inventing wisdom of our own; and will not esteemed research-smitten pharmacists unlock their stores of knowledge, and reveal their treasures to the popular gaze? This present anniversary has in its favour every element of success: experienced pharmacists have volunteered their services, and there are new names upon the list of the contributors of papers. The proverbial hospitality of the West will prove no small attraction, nor less will unrivalled scenery delight the visitor. We are proud to think that London, though a trifle smoky, and in certain localities not particularly scenic, can in some sort repay the kindness of our entertainers by furnishing one of the strongest attractions that will be seen at Plymouth. Never have the fortunes of the Conference been entrusted to abler hands than those of Professor Redwood, and we of the metropolis are vain that from our centre so competent a representative of British pharmacy could be selected.

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There has been an anniversary at Kennington, of less pretentious character, but still one well worth recording. The prizes of the summer session were distributed at the South London School of Pharmacy. The chair was taken by the Rev. S. B. Harris, rector of the parish; while the school chair, popularly called the rostrum, was occupied as usual by the secretary, Mr. Baxter. Thus there are always two chairmen at these reunions, for there is an objection on the part of the executive to do anything by halves. The report showed the continued success of the establishment. Numerically, the students are yet in excess of accommodation offered. Once more the list of the successful candidates at the school furnished the list of the successful candidates at the Square. The end of the session had not damped the hilarity of the pupils, before whose minds were present visions of *dulce domum* and rural happiness. They were irrepressible in their mirth and in recognition of their medal-rewarded companions; fortunately for the subsequent speakers, they were equally enthusiastic in their applause. It appears that it has become an item in the programme of the proceedings that there should be a short address from the visiting examiner. That gentleman went home with a bewildered but very grateful sense of the cordiality of his reception. He had never indulged an anticipation that any spoken words of his could have been listened to in so kind a spirit. A point attempted to be brought out was that the success of no public school could be interpreted alone by the progress made by a few brilliant or exceptional scholars. Their existence in a school was gratifying in the extreme—they encouraged the zeal of the teacher, being his immediate reward—they encouraged a host of other students by their example. Yet if the value of a school was to be appraised by the success of such an inevitable minority, it would not be found in a position to justify the gratitude of the world. Success had a much wider signification, and it was to be found in the higher standard of action, thought and knowledge that thorough training at a great establishment must necessarily confer. In fact, said the examiner, he could not accept the word "unsuccessful" except under one condition, for he believed in no such thing as failure, save where there was indifference to success. The rev. chairman (Mr. Harris) described in an effective manner how intimately the science of chemistry was connected with whatever bore upon the progress of human life, and how its cultivation was capable of infinite application. Dr. Muter may be congratulated on having planted a fresh centre of chemical teaching in our midst, to which the student may in confidence resort.

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Two years ago we paid attention to the subject of illustrations to scientific manuals. With regard to very high-class work, though the choice is limited to certain artists, no difficulty exists. Where neither expense nor time are under consideration, a few noted draughtsmen and engravers meet the requirements of the most fastidious. It has, however, still remained a desideratum to have some accurate work capable of being produced at a moderate expense. The work must have a certain degree of finish and absolute accuracy, for without this last quality other recommendations are valueless. Many attempts have been made in this direction, some dating many years back. There was, we well recollect, an instantaneous process by which an engraved picture was executed during a sitting at the Society of Arts, and a presentation copy given to the audience. George Cruickshank spoke warmly in its behalf; but the scheme dropped. Of late the zinco-photographic process has been advantageously employed, familiar examples of which are to be found weekly in the *Graphic* and elsewhere. Where there are no heavy shadows it is good—for outline sketches, excellent; and for outline reductions, unexceptionable. We must not pass over graphotype, useful chiefly for outline sketches. These and kindred methods have a distinct advantage, namely, their rapidity of execution, and we almost fancy that some of our *confrères* are not aware how serviceable some of these processes would be found in adding striking illustrations to their circulars and printed matter. There is a French scientific paper, of small size but of great worth, which we recommend to the notice of the pharmacist. It is called *Les Mondes* or *Kosmos*, under the direction of the Abbé Moigno. It contains this month an account of photography applied to wood, by a process invented by M. Billon. This seems to promise excellent results, though the idea itself, we need hardly say, is not novel. The reporter (not the inventor) states that in proofs obtained hitherto of photography on wood the whites of the picture were formed by reduced silver, like those of glass positives; that to ensure a good photograph it was necessary first of all to apply a layer of black upon the wood, which gave a uniform grey tint, and injuriously affected details. Further, that these proofs were extremely fragile, were not easily retouched, and that the breathing of the engraver on the block, so as to remove the small cuttings of the graving instrument, deepened the surface tint. These inconveniences, it is claimed for M. Billon, have been surmounted, and he is said to have produced some photographic sketches on wood which rival the most beautiful results obtained on paper. These photographs are thrown on a white ground, and possess equal thinness and solidity. The specimen given of a picture taken from the Louvre, "The Miraculous Draught of Fishes," is the best eulogium that could be pronounced upon the exactness and delicacy which can thus be effected.

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It is seldom we turn to the recommendations of an advertisement for pharmaceutical information, even when such announcement is a direct quotation from high medical authority. We must, however, make an exception with regard to a well chosen extract from Sir Henry Thompson on the treatment of calculus, which is made to promote the sale of a mineral water. It is the general question to which we wish to advert, as it is one which for some time past has strongly been presented to our thoughts. We have a conviction that English people have not as a rule a just estimation of the value of those natural springs which are in daily and universal repute on the Continent. The British pharmacist is here in fault, for the customer cannot have great confidence in a class of remedies which his natural adviser ranks as harmless beverages. These waters are in vogue amongst the aristocracy and the travelled Briton, both of whom use them with discrimination. Our middle class is of opinion that waters from known French and German springs are an elegant refreshment for the rich, but are out of the question altogether when true medicinal benefit is to be desired. The poor, on the other hand (as we know from experience) accept them with feigned gratitude from a benevolent donor; but no sooner has the Lady Bountiful left the cottage door than the supposed weak trash is deposited in the cupboard. It has not the merit of being either nasty, thick, or coloured, and can have in consequence no possible virtue save that suggested by imagination. The remarkable fact connected with these waters is that the potent effects they produce are totally at variance with the action that might be predicated from the estimated amount of the salts contained. It is essential to the right understanding of the matter to recognise that living natural combinations are far more efficacious than the most skilful compounds of the pharmacist, and we must point to the energy observed in the action of nascent gases as a guide to the analogies of the case. Has the reader ever had personal experience in the retributive justice inflicted by a dose of the spring called Elisabeth when taken at an undue hour (after sunset) at Homburg? Has he seen fever allayed, as at Paris, solely by the exhibition of a saline spring water? Has he seen the aged restored to a comfortable old age by the use of Vichy? The facts are incontestable, but not less is the advice of Sir Henry Thompson good. "In studying these waters I wish you to look with me at the composition of them, and at the same time to dismiss from your minds entirely those views of medicinal doses which you have acquired in the dispensary." He points out that the reduction by evaporation of any of these mineral waters to their pharmaceutical condition of crystallised salts would leave them possessing no more power than similar salts as obtained by the ordinary processes, and met with in every chemist's shop. He gives an instance where in the *living* natural water about 25 grains of sulphate of soda and 20 grains of sulphate of magnesia proved a sufficient purgative, doses which, taken in any combination out of a druggist's drawer, would have no appreciable effect. Nature is an admirable dispenser, and has for ages mixed her saline preparations better than the most intelligent chemist and druggist.

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The Pereira medal has been gained this year by Mr. George William Bullen. There were thirteen competitors for this, the highest and most honourable prize which it is in the power of the Pharmaceutical Society to confer. We congratulate the fortunate recipient on the distinction which he has gained, and we hope that he may long live to enjoy his laurels, and to prove by his future career that he has been imbued with the spirit of the master whose name is stamped on the medal he has won.

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There was a halcyon period when we believed certain chemical facts devoutly. We accepted, for instance, the union of an acid and a base as a good theory, and thought that together they produced a salt. Hydrogen was a gas until it got occluded; and two names were about sufficient, the one to indicate the popular, the other the scientific appellation of a body. That was the age of diagram, not of equation. All those theories have vanished one by one: we have radicals acidulous and basylous, saturated and unsaturated atoms. We even tremble for the elements, which may enjoy their ephemeral existence, for Professor Attfield would feel no surprise if before any given quarter-day they resolved themselves into secondary compounds. What a glorious old atom that will be which will be able to survive the whole Chemical Society attacking its tough life. There is scarcely an acid retaining the formula bequeathed to us by Fownes or Gregory: to balance which we have acid salts which will not redden litmus, and balloons soaring in the air rendered specifically lighter by the weight of an added metal. Still, we did think that the time-honoured notion of the circulation of the sap would not have been disturbed—and that our children might continue to imagine that plants absorbed carbonic acid from the air by means of their leaves. This would probably have remained the case had not Professor Bentley migrated to the Tyrol. Mr. Andrew Murray has contended before the Scientific Committee of the Horticultural Society that the sap does not descend, and that plants do not absorb carbonic acid. He thinks that the rain carries down $CO_2$ into the earth, and there it is absorbed by plants in the formation of the wood; but that it does not descend by the leaf and supply the plant with carbon for its structure. The leaves act as pumps which draw up the sap from the roots, and their surfaces evaporate its moisture. In proof, Mr. Murray noticed a vine stem, round which he fixed a cup holding a coloured lithia solution, lithia being detected absolutely by the spectroscope. The vessels above and below the notch were filled with the coloured solution, but there was neither infiltration nor extravasation in the direction of the surrounding parts. How far the experiment was conclusive we leave vegetable physiologists to determine. Sufficient is it here to state the new hypothesis which saps the foundation of our ancient faith.

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At the same time there is an important investigation now instituted by the French Academy into an attempt made by MM. Guillemare and Lecourt to preserve the green colouring matter of vegetables. We note the idea because it has attracted much attention, and has been commented on by several scientific journals. These two chemists propose the substitution of chlorophyl for the salts of copper. Vegetables heated to about 100° C., brought into contact with soluble chlorophyl, become saturated with it, and when thus saturated they retain their colour. To effect this, a soluble compound of chlorophyl, alumina, and sodium phosphate, is prepared, and the *liquor chlorophyllatus* added to the water in which the vegetables are boiled. Successful experiments are recorded, but the method is still under consideration. We suppose that in all large laboratories it has been the practice to separate the chlorophyl at an early stage during the manufacture of green extracts, such as conium, hyoscyamus, and belladonna. We long knew an old operator who was remarkably happy in retaining a green colour by adding the chlorophyl towards the completion of the process, but he judged the exact heat required by the glow the concentrated liquid might produce upon his face. Occasionally he miscalculated the temperature, and failed. It appears a marked step in advance to convert the chlorophyl into a somewhat stable and definite solution. We have little doubt but that we shall have at our command an improved laboratory form of manipulation.

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A very graceful occurrence took place at Harley Street, when, through the medium of Professor Huxley, a handsome testimonial was presented to Senor Manuel Garcia in recognition of the services he has rendered "alike to science and humanity" by his discovery of the laryngoscope. Those who would cultivate the art of public speaking could not do better than study the beautiful simplicity in which the professor's address was worded. He described the endless associations that are awakened by the human voice, that most perfect of all instruments for conveying sound, and enlarged upon the value of the laryngoscope to the musician, the physiologist, and the physician. The subject is rather medical than pharmaceutical, and we must curtail our notes; yet we should consider ourselves wanting as a guide to others if we failed to point out the choice oration of our distinguished biologist. Senor Garcia replied in a befitting manner, and with great modesty attributed the success of the instrument as much to the mechanical excellence of the workmanship as to his own inventive skill. "A life of labour," he observed, "might be well repaid by words like those to which they had just listened."

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While these amenities have taken place in a manner which will add to the reputation of both persons concerned, a strange circumstance has occurred in Paris relative to the proposed contest between Dr. Bastian and Professor Pasteur. The English savant has stated his woes in full in the columns of *Nature*, and having carefully read the correspondence more than once, we fail to gain the smallest light upon the subject. Dr. Bastian, it will be recollected, offered to demonstrate his views on spontaneous generation before a duly appointed commission, in presence of Professor Pasteur, and on his antagonist's own ground. Personally, therefore, he was at a disadvantage, and his resolve had about it a strong element of pluck. How some of his letters went astray; how finally he got to Paris, and when there how the commission vanished into thin air; how Milne Edwards, who was to act as mutual interpreter, from his bilingual capabilities, withdrew from the scene altogether; how the actual decisive meeting, which was arranged to come off at eight o'clock in the morning, came to grief instead; and how Dumas appears to have arrived at the trysting spot downstairs, and left the unhappy disputants engaged in conversation up aloft, must be perused in detail to be appreciated. The whole thing ended in a "Comedy of Errors," and we leave the reader to consult *Nature* on the matter, for it has been, and remains beyond our comprehension. The discourtesy evinced was palpable; nothing can explain away that fact.

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Before we part we must draw attention to a little book published by Hachette—English price, three shillings—called "Agenda du Chimiste," which should be in the hands of every British pharmacist. It is written, compiled, or arranged, as the reader may think proper, by the students in the laboratory of M. Wurtz. Its production has cost something under 500*l.*, and its enthusiastic contributors have worked for fame, and we hope, hereafter, for pecuniary reward. M. Wurtz says in the introduction that the chemist will find in it an immense deal of information extracted from voluminous works and from scattered memoirs here condensed into 368 tables. It is divided into three chapters: the first includes physical and mathematical details; the second, chemistry pure; the third, information respecting chemistry as applied to the arts and industrial pursuits. A crowd of included topics are enumerated, comprising the analysis of milk and urine, glass and pottery, sugars, starches, alcohols and vinegars. So much intelligence for so little money is creditable to the industry of these laboratory students. A Paris editor fears that the volume will not be acceptable to the students of pharmacy, as it does not bear the name of Dorvault, nor the trade mark—"Officine Union Pharmaceutique. Prix-courant." Let the members of the London Chemists' Association, or the united students at the Society's Laboratory, go and do likewise. Mr. Peter Squire would treasure up no vengeance in his heart against them; and if they succeed in cutting out his new edition of the "Companion," shortly to appear, we venture to assert that his only retaliation would be to invite the confederates to dinner.

# The Pharmaceutical Council.

THE following members were absent from the council meeting on August 1:—Messrs. Atherton, Brown, Hanbury, and Mackay.

After the elections of members, &c., the reports of committees were brought up. Mr. Owen reported that he had spent the 30*l.* granted to aid the election of a child to an orphan asylum, and that he had just succeeded in gaining the election of the candidate by only 7 votes above the minimum. Therefore no money had been wasted. The professors sent in satisfactory reports. The Library, Museum and Laboratory Committee had considered the subject of the evening meetings, and recommended the appointment of the professors, the editor and the curator as an Evening Meetings Committee, to examine the papers submitted to be read at the evening meetings, those selected to be published in the *Pharmaceutical Journal*, and paid for at the usual rate.

The Law and Parliamentary Committee presented a long report. They had been considering a new form of caution letter to be sent to persons accused of infringing the Pharmacy Act, but they had not yet settled on a satisfactory method of expression. Of cases commenced, it was stated that John Jones, of 197 Westminster Road, Kirkdale, Liverpool, had paid 5*l.* and costs into Court. Edmund Mainprize, of 64 High Street, Bridlington, had undertaken not again to violate the Act, and proceedings against him had therefore been stayed.

The committee recommended that an action should be commenced against some unregistered person who had sold laudanum under a patent medicine stamp, in order that the legality of such sale should be tested.

The committee recommended that hydrate of chloral be added to Part 2 of the poison schedule of the Pharmacy Act.

In the same committee's report was included a resolution which had been received from the Chemists' and Druggists' Trade Association, expressing regret at the action which the council had thought best to adopt in reference to cases of illicit trading, evidence of which had been supplied by the association, particularly the resolution of the council by which it decided to give the registrar power to warn in all cases of infringement without instructions from the council in each case. Messrs. Bottle and Rimmington proposed to omit this resolution from the minutes on the ground that it was not quite courteous, and Mr. Sandford objected that it had not been addressed to the committee but to the council, and therefore should not appear in the committee's report. This somewhat small subject was discussed at considerable length, and ultimately, after an equal division of eight votes on each side, Mr. Bottle withdrew his proposal to omit this particular resolution from the minutes, as the president was certain to give his casting vote against the same. The recommendation to add chloral hydrate was held over till next October, to afford an opportunity of adding other articles if necessary; but all the rest of the committee's report was adopted.

### Counter Practice.

An important discussion followed on a resolution proposed by Mr. Hampson, and seconded by Mr. Atkins, to the effect that the council should defend, if necessary, a member of the society who had been threatened with prosecution under the Apothecaries Act. Messrs. Owen and Shaw and the vice-president, (Mr. Savage) spoke in support of this motion. The latter read extracts from old numbers of the *Lancet*, dated 1826 according to which it appeared that at that date such proceedings against chemists were strongly condemned. The Apothecaries Act was spoken of at that time in the *Lancet* as having been "projected by avarice, supported by intrigue, and enacted by ignorance;" also that it could only excite "unmixed contempt for its authors." The president objected to the introduction of these old opinions, but the vice-president replied that they were as likely to understand the Act fifty years ago as now, especially as during the interval no attempt had been made to enforce its provisions, as was now the aim. Mr. Robbins was also in favour of supporting a member who was conducting his business properly. Mr. Schacht had always objected to the principle of the council undertaking any such defence. By following such a course the council would be taking up the indefensible position of justifying unqualified persons in prescribing for diseases. He thought the council would be wrong in setting itself up against the best legal authorities. Those who broke the law did it knowingly, and they ought to be prepared to take the consequences themselves. He would in October bring forward a motion that the council should communicate with the Apothecaries' Company with the view of arriving at an amicable arrangement. Mr. Betty supported Mr. Schacht. Mr. Bottle, however, considered that the time was come to get the position of the chemist and druggist defined. He thought, however, it would be better to leave the defence of the threatened member to the discretion of the solicitor. This modification in the resolution was agreed to by the authors. The president, while admitting the universality and the public convenience of counter practice, was reluctant to sanction or encourage it by defending a case like this; and Mr. Hills thought more consideration should be given before the council thus ran into law. Mr. Shaw recalled the remarks of Mr. Flux at the annual meeting, when he expressed his conviction that the Courts would not put a stop to *bonâ fide* counter practice. Mr. Cracknell prescribed himself occasionally, but he did not think it was the place of the council to defend in a prosecution of this sort. He himself should not think of applying to the council. Mr. Churchill did not wish to see counter practice extended, but he hoped the council would defend this case. It was a plain and simple one, and the solicitor of the society had no doubt information which it would be difficult to obtain elsewhere. If the history of the introduction of the saving clause in the Apothecaries Act could be traced, it would no doubt be useful. Mr. Hampson, in reply, pointed out that a section of the medical profession had resolved to put a stop to counter practice if they could, and as this was an attack on the interests both of the public and of the trade, it was the duty of the council representing both to take the matter up.

On the motion being put, the following voted:—

*For.*—Messrs. Atkins, Betty, Bottle, Churchill, Gostling, Greenish, Hampson, Owen, Rimmington, Robbins, Savage, and Shaw—12.

*Against.*—Messrs. Cracknell, Hills, Schacht, and Williams—4.

The motion was therefore carried.

### Utilising the Benevolent Fund.

A resolution was brought forward by Mr. Robbins, proposing that the surplus income derived from subscriptions, instead of being funded, should be applied to the purchase of admissions into orphan asylums, or in any other way the council might deem desirable. Mr. Robbins combatted the idea that either the present annuitants or the invested capital could be endangered by such a course as this. Even supposing the annual subscriptions to fail altogether, the present annuitants would all die off long before an appreciable reduction could be made in the funded capital. There was now an annual surplus of 400*l.* or 500*l.* a year, and he could see no reason why the council should try to build up a great fund, so that chemists 20 years hence should have no need to spend anything in charity.

Mr. Bottle seconded the proposal, which was opposed by Mr. Sandford. That gentleman's objections (which, in his absence, were read by the president) appeared to be directed mainly to the form of the proposition. Mr. Sandford argued that the council had already power to aid the election of orphans to institutions. Ultimately the further consideration of the motion was postponed until October.

## Provincial Reports.

### BRIGHTON CHEMISTS AND CO-OPERATIVE STORES.

At the latter end of June a meeting of the chemists of Brighton was called, at the Town Hall, by Mr. W. D. Savage, president of the local association, to consider whether any steps should be taken to meet the existing action on the part of several chemists in the town who are endeavouring to compete with the co-operative stores by selling patent medicines, drugs, &c., at the same prices. This meeting was, after considerable discussion *pro* and *con.*, adjourned for a month, in order to give time for further consideration.

On Friday, July 27, the meeting again assembled, when the following resolution, moved by Mr. Vizer, and seconded by Mr. Haffenden, was carried *nem. con.*:—

> That in the opinion of this meeting any attempt to compete with "co-operative stores," and "underselling chemists," by a systematic reduction of prices of patent medicines, drugs, &c., would be injurious to the real interest of the trade, and prejudicial to its position in the eyes of the public.
>
> This meeting, therefore, deprecates any such act on the part of the chemists of Brighton.

### MIDLAND COUNTIES CHEMISTS' ASSOCIATION.

The annual meeting was held at the Great Western Hotel on Friday, the 13th ult., Mr. Arblaster in the chair. The committee presented their annual report and balance sheet. The chairman congratulated the association upon the very satisfactory condition of its finances, there being a balance of 30*l.* 1*s.* 8*d.* in the hands of the treasurer. The report of the librarian was very satisfactory, the library having been resorted to more than during any previous year. Many additions were reported of useful and valuable books, and several excellent works had very kindly been presented by the authors. The committee recommended a further grant of money for the purchase of books. Mr. Stokes Dewson reported that the educational work of the past year showed very gratifying results. Just over thirty students had presented themselves for examination, and of these twenty-five had passed; and in a recent examination in London, out of seven candidates from this school six passed. Such results place the Birmingham school in the foremost rank among provincial schools, and compare very favourably with the results obtained in the metropolis. One student also obtained Queen's Prize for Botany. Considerable additions were recommended to the prizes (which are awarded after competitive examination only to those who have passed their pharmaceutical examinations), and a new prize of one guinea was offered by the president, Mr. W. Jones.

The result of the recent prize examinations was as follows:—

First prize (for men who have passed Minor), 1876, Mr. R. Hollick.
First prize (for men who have passed Minor), 1877, Mr. C. Arblaster.
Second prize (for men who have passed Minor), 1877, Mr. S. Russon.
First prize [*] (for men who have passed Preliminary), Mr. Prosser.
Second prize (for men who have passed Preliminary), Mr. Norman Smith.

The election of officers was then proceeded with. Mr. W. Jones, the president, was unanimously re-elected; Mr. F. S. Morris, vice-president, and Mr. Lucas, treasurer, were also re-elected; Mr. Stokes Dewson was appointed honorary secretary, *vice* Mr. H. Sanderson, who, from pressure of private business, has resigned.

The following gentlemen were elected to form the committee:—Messrs. Alldridge, Arblaster, Barclay, Brassington, Brown, Chase, Churchill, Gibson, Green, Grieves, Hooley, Holdsworth, Pare, Price, Sanderson, Snape, A. Southall, W. Southall, Whittles, Wilkes, Wilcox.

The *soirée* had been a success, and a good balance of profit had been realised.

On the motion of Mr. Haydon, seconded by Mr. Pare, the meeting was adjourned till August 8, when Mr. W. Churchill would read a paper on the "Position and Prospects of the Trade."

A cordial vote of thanks brought the meeting to a close.

### PHARMACEUTICAL SOCIETY OF IRELAND.

The monthly meeting of the Council of the Pharmaceutical Society of Ireland was held at the College of Physicians, Kildare Street, on Wednesday, August 1, Sir D. J. Corrigan, president, in the chair. The following were present:—Dr. A. Smith, vice-president; Mr. William Allen, Dr. Collins, Mr. J. Goodwin, Mr. E. M. Hodgson, Mr. J. T. Holmes, Sir G. B. Owens, Mr. Payne (Belfast), Mr. Pring (Belfast), Dr. Ryan, and Professor Tichborne.

The following notice of motion appeared on the summons of meeting:—

By the President:—

*Vid.* p. 60 of Calendar for 1877.

Pharmaceutical Examination, Paragraph (second) at present reads thus: "Candidates must also have been practically engaged in compounding and dispensing for at least two years under the instruction of a Pharmaceutical Chemist or Apothecary."

To be amended thus: "Candidates must also have been practically engaged in compounding and dispensing for at least two years in the establishment of a Pharmaceutical Chemist or Apothecary, keeping open shop, or in the compounding department of a Pharmaceutical Chemist or Apothecary to an hospital containing not less than 100 beds."

Dr. Ryan proposed and Dr. Collins seconded as an amendment that the resolution should stop at the word "shop," both gentlemen urging that the experience of compounding in hospitals was inadequate for the requirements of a compounding establishment.

The president accepted the amendment.

Sir G. B. Owens urged that a certificate from an apothecary who dispensed his own medicines should be admitted, and proposed a resolution to that effect, but there being no seconder it was withdrawn. The motion of Dr. Ryan was then carried, Sir G. B. Owens protesting against it.

The president remarked that a protest could not be entered on the minutes, but Sir George might, if he wished, call for a division. After some further conversation, the matter dropped.

Professor Tichborne and Mr. Payne were delegated to represent the society at the Conference in Plymouth.

The following were admitted to membership:—

Alexander Chapman, 50 Ann Street, Belfast
George Atkinson Webb, 33 High Street, Belfast.
James Whitla, L.A.H., of Monaghan.

### EXAMINATION OF COMMERCIAL WAX
### (*CERA FLAVA.*)

Wax is one of several substances in which direct adulteration is peculiarly difficult of detection, if we except one or two of the grosser kinds, at one time said to be common, and embracing substances such as starch and flour, oxide and carbonate of lead, and earthy substances generally. These adulterants are comparatively easy of detection, and probably as a consequence are now rarely met with. Indeed, out of a considerable number of samples examined, only one contained any insoluble impurity, and this apparently was contaminated (not adulterated) with organic matters from imperfect clarification. This rendered the sample more or less impure according as the estimation was made from a portion taken from the upper or under strata of the block. When we come, however, to fatty and similar substances, the difficulty is at once experienced, and is, it need scarcely be pointed out, all the greater from the fact that wax itself is not of definite constitution. Had it been so it is more than probable that one of the two following methods would have been sufficiently accurate to determine its purity for most practical purposes, namely, (1) by ascertaining its melting point, or (2) by ascertaining its solubility in any suitable agent. The melting point, for example, of the following and other adulterating substances is wonderfully uniform, viz., tallow, stearic acid, resin, paraffin, theobroma oil, &c. But taking yellow wax, the following different samples will sufficiently show, not only its variability, but also the fact that the Pharmacopœia standard of 140° is sufficiently low. The samples are placed in the order of their melting point:—

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[*] Prize value 30*s.*, given by Mr. T. Barclay.

| Sample | Appearance | Melting Point |
|---|---|---|
| 1 .. .. | Bright yellow .. .. | 150° Fahr. |
| 2 .. .. | Very dirty yellow .. | 149° ,, |
| 3 .. .. | Dark yellow .. .. | 148·5° ,, |
| 4 .. .. | Pale ,, .. .. | 147° ,, |
| 5 .. .. | Bright ,, .. .. | 146·5° ,, |
| 6 .. .. | Ditto ,, .. .. | 145° ,, |
| 7 .. .. | Dirty ,, .. .. | 144° ,, |
| 8 .. .. | Bright ,, .. .. | 142° ,, |

Betwixt the two extremes it will be noticed that there are 8°, and this would permit of an adulteration of 30 per cent., say of stearic acid, and still be above Pharmacopœia standard, as the following experiments will show. To sample 1 of the above was added 10 per cent. stearic acid (the melting point of which had previously been determined at 123°,) and the melting point of the adulterated wax was reduced to 147°. There was next added to the wax 20 per cent. stearic acid, and the melting point was brought down to 144°, whilst 30 per cent. placed it at 142°. Theoretically the gradation is not uniform, nor was it in the case of tallow in a similar experiment, although the results were more marked as regards the limits. The gradation, however, may be accepted as correct. The plan adopted of taking the melting point was in every case the same, namely, coating the bulb of a finely graduated thermometer with the substance, and exposing it to air gradually heated, until the first drop formed at the extremity of the bulb, when the scale was correctly noted.

The solubility of the wax, however, appears a more promising method of determining its purity—at least, at first sight—if we keep in mind that wax alone of most substances which might probably be used as adulterants is not completely soluble in certain agents. Stearic acid, tallow, paraffin, theobroma oil, spermaceti, and resin, for example, are all completely soluble in the cold in such substances as chloroform, benzole, &c., and therefore the estimation of the insoluble residue might seem an easy method of determining the purity of wax when treated with such agents. The idea is not exactly new, although we are not aware that anywhere are there sufficient data given to yield correct conclusions regarding the point. Considering it sufficiently important to make a few investigations, the following results were tabulated, and may be not uninteresting, more especially as they were made on the same samples of wax as the foregoing, and, moreover, as they bring out apparently a peculiar connection betwixt their melting point and solubility:—

| Sample | Melting point | Solubility in benzole |
|---|---|---|
| 1 .. .. | 150° .. .. | 45 per cent. |
| 2* .. .. | 149° .. .. | 43·5 ,, |
| 3 .. .. | 148·5° .. .. | 42 ,, |
| 4 .. .. | 147° .. .. | 44 ,, |
| 5 .. .. | 146.5° .. .. | 56·5 ,, |
| 6 .. .. | 145° .. .. | 69 ,, |
| 7 .. .. | 144° .. .. | 67·5 ,, |
| 8 .. .. | 142° .. .. | 65 ,, |

In other words, as a rule, the lower the melting point the greater the solubility of the wax. It should, however, not be forgotten that all waxes are completely soluble in such reagents even at comparatively low temperatures, and that all experiments should therefore be performed at a uniform temperature. The temperature at which the foregoing results were obtained was 60° Fahr., and the plan adopted was to dissolve the wax thoroughly by agitation in about six times its volume, filter, and wash the residue with benzole until the filtrate passed through quite colourless, and then evaporate spontaneously until no further loss was experienced on repeated weighing. As thus obtained the residue was a greyish-white, hard and brittle mass, melting at 160° Fahr., and only sparingly soluble in large excess of either turpentine or benzole. The weakness of this method of estimating the purity of wax, like that of the melting point, is in the wide limits between which even genuine waxes may be recognised. With a single exception, all the foregoing were believed to be good commercial samples, and yet the solubility ranged from 42 per cent. up to 69 per cent. Undoubtedly, a very considerable adulteration might be made, as in the case of the melting point, in some of the samples without detection, but if the adulteration happened, on the contrary, to be in a sample with a lower melting point or a higher degree of solubility the result could scarcely fail to be so marked as to excite suspicion. This is more than can be said of many of the other tests, for even very gross adulterations with tallow and stearic acid in some cases failed to show either in taste, smell, feel, colour, fracture, or with lime water or sublimation and acetate of lead.

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## APPROXIMATE QUANTITATIVE TESTS.

By J. Barker Smith.

*Seventh Paper.*

### VI.—Quinine.

OXIDISABLE matters of cinchona bark affecting the permanganate include the alkaloids, of which the decolorising power in one per thousand solution may be stated in a general way as 25 milligrammes. The relative value of some official and other processes of bark exhaustion is in some measure shown by the following figures indicating decolorising powers in parts of grammes for the same sample of yellow fibrous bark, and refer, of course, to all oxidisable matters.

*Tinctura*, ·16; *Decoctum*, ·27; *Infusum*, ·32 (1-20); *Cold aqueous percolation* (1-20) ·4, repetition with acidulated water and marc ·45, total ·21; *Tincture marc percolated*, a total of ·14.

In view of separating cinchotannic acid and oxidisable matters other than alkaloids, general experiments were made with the tincture and reagents, ammonio-acetate of zinc, calcium hydrate, and lead acetate. In each case 5 c.c. of tincture were taken, the spirit evaporated, residue diluted to 25 c.c., a few minutes' agitation with reagent, filtration, filtrate diluted to original volume, and titration with permanganate. Data being ·025 gramme alkaloid = 50 c.c. standard permanganate. Percentage results for tincture:—Zinc, ·78 alkaloid; lime, 1· alkaloid; lead, 1·1 alkaloid. A gravimetric estimation with lime and chloroform in the usual way, and a supplementary experiment with the reagents and a one per thousand solution of quinine decided that the factors of total precipitation of cinchotannic acid, &c., and the rate of solubility of alkaloid in reagent under certain conditions, would have to be approximated to give precision to this method of analysis. The barks will therefore receive further attention.

*Quinia* (hydrated).—Obtained by precipitation from Howard's sulphate, air-dried, heated in water-bath for a quarter of an hour before the weighing. One gramme dissolved in a litre of acidulated water gave ·019 gramme as decolorising power.

*Ferri et Quiniæ Citras.*—Estimation occupies only a few minutes: one gramme of the citrate is sufficient for both examinations. Half a gramme of citrate is dissolved with 4 c.c. of water in a pipette holding about 15 c.c. (practically the barrel of a glass syringe fitted with rubber tube cap and cork); an equal volume of ammonia (1 strong—10) is added and the whole well shaken; the alkaloid will float in a coherent mass, which may be drained and washed by percolation with a few cubic centimetres of water. If the alkaloid is soluble in ether and verified it may be at once dissolved in acidulated water, and dilution made to at least 50 c.c., the permanganate estimation applied and alkaloid calculated.

The ferrous solution and washings may be strongly acidulated, diluted to 20 c.c., and estimated separately. If it be required to weigh the ethereal residue, to supplement the permanganate, a larger pipette should be used and a gramme of citrate taken. The first volume of ether should be simply floated on the alkaloid, not shaken with the ammoniacal solution. The results of an examination of citrate of iron and quinine were as follows:—

Half a gramme of citrate dissolved in 50 c.c. of water formed a solution of which 10½ c.c. decolorised.

Citrate Citrate Quinia Quinia
As ·105 : 100 :: ·019 : 18·4
= =

Quinia equivalent, 18½ per cent.

Half a gramme of citrate treated by the ammonia process indicates for citrate 15·2 per cent. quinia, and washings less than 3·8 per cent. of quinia equivalent.

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* Dirty sample, including fully 5 per cent. organic matter, which probably influenced the melting point.

*Quiniæ Sulphas.*—A solution containing 1 gramme per litre gives ·020 gramme as decolorising power. For normal results dilutions must be somewhat approximate. *Vide* Morphia, p. 55. The process for the estimation of iron and quinine citrate may be modified and applied to quinine sulphate. A solution may be titrated immediately.

*Tinctura Quiniæ.*—Not so easily estimated as the citrate; *vide* Essences. Results likely to be too high.

Five cubic centimetres of the tincture are placed in a small porcelain cup and evaporated to half, a few cubic centimetres of water being added: when cold the residue is transferred to the pipette and ammonia added; the pipette is inverted a few times, not shaken, and the more or less turbid liquid drained or decanted according to the behaviour of the alkaloid clot. The washed alkaloid is dissolved in dilute sulphuric acid, and the whole diluted to 50 c.c. for the permanganate estimation.

A sample of tincture prepared about a month ago, according to the Pharmacopœia, and which had deposited, gave an indication of 2 per cent. Dried deposit contained about 10 per cent. of quinia. Amount of deposit not accurately estimated; did not much exceed one gramme per litre in this sample.

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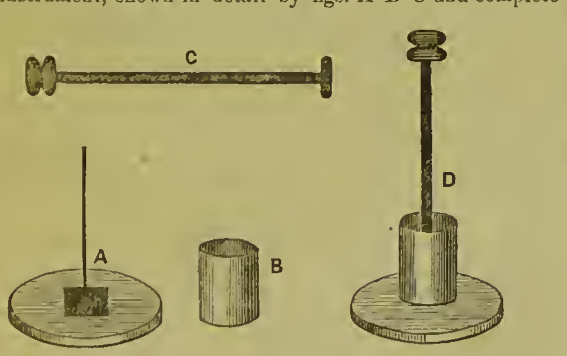
## LIME BALLS FOR THE OXYHYDROGEN LIGHT.

As the season is again approaching in which the oxyhydrogen light will be required for its many purposes, the following hints may not be uninteresting, and in some cases may even be very profitable, regarding the production of artificial lime balls. The loss as well as trouble and annoyance in storing the lime balls in ordinary use are too well known to require any apology for suggesting either a remedy or a substitute. Those made according to the following plan have now been tried for several years, and out of many hundreds used not one failure through splitting or otherwise has, so far as we are aware, been reported. Carbonate of lime is taken and made into the consistence of newly-made putty with thin mucilage, and this is next packed into paper cylinders of the requisite size and put aside for a short time to set. After they have become a little firm the hole is pierced in the centre of the cylinder with an awl or other suitable instrument, on which they are transferred to a hot oven to thoroughly dry. This was the plan first pursued in the making of these artificial lime balls, and although somewhat primitive and slow, within certain limits answered the purpose admirably. Lately, however, a simple but ingenious little instrument, shown in detail by figs. A B C and complete by fig. D, has been devised, which, from at once forming the lime cylinder and piercing the hole, and above all from permitting pressure in the formation of the ball, produces a very superior result more simply and quickly than by any other method yet suggested. The conditions of success in the making of a ball after this plan are these, namely—1st. That the mucilage employed be not too thick, and that it be added in quantity sufficient to make the lime into a soft mass. If it be too thick it introduces too much organic matter into the lime, which burns away with an irritating odour immediately the ball is heated up with the gas, and the probability is that it falls to pieces; whilst, on the other hand, if the mass be not sufficiently soft the chances are that it will not be homogeneous, and the cracks and fissures will cause it to split; 2nd. That sufficient pressure be exerted to make the ball not only homogeneous, but compact and firm; and 3rd. That it be thoroughly dried, so as to remove all interstitial moisture. If rightly made the ball will be a proper cylinder, uniform in structure, and so hard that a knife will make little or no impression upon it even when rasping it. They cost a mere trifle, will keep good for any length of time, under almost any circumstances, and will burn for at least two hours in all but the largest jets of gas. For these they are not suitable, as they pit too rapidly and deeply, but for jets such as are employed in all ordinary lanterns they are admirably adapted, and, as already stated, out of several hundreds tested in all manner of circumstances, not one has proved a failure.



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## NOTES ON PESSARIES AND SUPPOSITORIES.

We have frequently heard complaints of the difficulty of getting nicely-finished suppositories and pessaries from the gun-metal moulds now generally employed in the manufacture of these medicated balls. The supposition may be wrong, but from experience we are inclined to impute much of the difficulty to an imperfect knowledge of the conditions regulating the expansion and contraction of both mould and substance used in their production. If, for example, the substance (say, oil of theobroma) be poured into the moulds at a temperature much above 140° or below 130°, the melting point being 124°, it will be found that the balls, if they come out at all, will in either case be broken and imperfect, for this reason, namely, that above the melting point the theobroma does not expand under different increments of heat in the same degree with the metal. Consequently, the higher the temperature of the theobroma the more is the metal expanded, which, cooling first, contracts on the ball like a vice. This, together, probably, with unequal cooling, produces unequal elasticities within the ball, which sufficiently accounts for the moulds refusing to give up the balls, as well as for their cracked and uneven appearance. On the other hand, should the theobroma be poured into the mould at too low a temperature, the metal at once cools it to such an extent that contraction within the mass cannot take place, and the same result ensues as in the previous case, but from the very opposite cause. The proper plan, therefore, is to heat the substance to the temperature already indicated, and having first breathed into the different cavities, so as to cause a thin film of moisture to adhere to the sides of the metal, pour the melted substance quickly in. If expeditiously and properly done, the balls when cool should slip from the mould without the least trouble, having a beautiful polished finish, and, what is more important still, having a uniform composition and structure, and not with the active medicinal agent all concentrated at the apex, as is always the case when the heat applied has been excessive.

Another difficulty frequently experienced is in mixing with the melted theobroma unmiscible substances, such as aqueous solutions, extracts, &c. In such cases the difficulty is generally overcome by first rubbing the solution or extract with a small portion of the unmelted theobroma, until the mass is thoroughly homogeneous, when it seldom fails to incorporate with the melted portion. A ball, for example, containing extract of belladonna, is not unfrequently ordered by medical practitioners. This extract fails to mix in any proportion with the melted theobroma, nor does the addition of such solvents as water, spirit, oil, glycerine, &c., which sometimes in other cases assist, at all facilitate its incorporation. If, however, the extract be first thoroughly rubbed up with a piece of the theobroma in a mortar, and then added to the melted portion immediately before pouring into the moulds, a very superior ball will be produced.

The settling of the active ingredient of some balls at the apex has already been referred to. We have seen a ball containing bromide of potassium sent out with all the bromide at the extreme point, forming a hard, gritty, almost insoluble mass, which must have been not only exceedingly disagreeable to the patient, but even dangerous. This is perfectly inexcusable and need never occur if care be taken to have the substance first thoroughly impalpable, and then incorporated with a small piece of the theobroma previous to adding to the melted portion at a temperature a little over the melting point. There is, moreover, another evil attending the over-heating of the mixture, where powders of a ponderous nature, such as bromide and iodide of potassium, or acetate and iodide of lead, are ordered, namely, the impossibility of an equal division of the substance where a number of balls are being simultaneously made. The powder falls to the bottom of the dish, owing to the fluidity of the theobroma, and no amount of stirring or dexterity of manipulation will ensure its equal distribution. The following are the strength of some of the non-officinal balls as ordered by a leading physician :—

| | Pessaries. | | Suppositories. |
|---|---|---|---|
| Atropiæ (belladonna) .. .. | $\frac{1}{30}$ gr. | in each | — |
| Belladonna extract .. .. | 5 grs. | „ | ½ gr. to 2 grs. |
| Opium .. .. .. .. | 2 grs. | „ | 2 grs. |
| Bismuth ex. .. .. .. | 15 grs. | „ | 10 grs. |
| Zinc ex. .. .. .. .. | 15 grs. | „ | 10 grs. |
| Alum .. .. .. .. | 10 grs. | „ | — |
| Alum and catechu .. .. | 10 grs. of each | „ | — |
| Acetate of lead .. .. .. | 7½ grs. | „ | — |
| „ „ and opium .. | 5 grs. and 2 grs. | „ | — |
| Gallic acid .. .. .. | 10 grs. | „ | — |
| Iodide of lead .. .. .. | 5 grs. | „ | — |
| Sulphate of zinc .. .. | 10 grs. | „ | 2 grs. |
| Iodide of potass. .. .. | 10 grs. | „ | — |
| Bromide of potass. .. .. | 10 grs. | „ | — |
| Gall and opium .. .. | — | „ | 5 grs. and 1 gr. |
| Santonine .. .. .. | — | „ | 3 grs. |
| Aloin .. .. .. .. | — | „ | 1 gr. |

## CHEMICAL REMEDIES.

It must be a matter of surprise to the purely scientific chemical student who, for the first time, opens the British, or, indeed, any other modern Pharmacopœia, to find that of late years so few compounds have passed from the domain of the chemist into that of the pharmacist. Taking the latest edition of the British Pharmacopœia, published in 1874, and looking down the list of articles included in this issue, but not in that of 1864, he would not discover more than about a dozen new substances which can be properly termed chemical. Of these a large majority, such as ammonium bromide, cadmium iodide, and bismuth carbonate are more or less valuable modifications of old compounds, the only really important and original novelties being carbolic acid, chloral hydrate, and amyl nitrate, so that in the space of ten years the therapeutist has drawn but three official substances of any real value from the vast stores of the scientific chemist.

If our chemical student should travel beyond the confines of the British Pharmacopœia, and search the leading pharmaceutical and medical journals of the last decade, he will find that during that time but very few non-official compounds have been introduced even temporarily into practical pharmacy. Numerous desultory and unsystematic trials have been made with various substances, but anything like a series of scientifically conducted experiments is only to be found in a very few cases. Amylene, methylene-bichloride, methyl-ethylic ether, trimethylic ether and a number of similar compounds have been tried as anæsthetics by Dr. B. W. Richardson and others, but, in spite of the truly philosophical way in which these researches were carried out, our old friend chloroform seems to retain its ancient supremacy. Butyl-chloral, or croton-chloral, as it used to be called, does not seem to have been able to replace its better known congener even in the hands of Liebreich, a remark which will apply with equal force to bromal hydrate. Potassium ethylate has been proposed as a caustic by Dr. B. W. Richardson, but his suggestion does not seem to have been received with any favour. Salicylic acid and its salts have a certain number of advocates in various quarters, but their worth as remedial agents does not seem as yet to be fully recognised. Picrates have been introduced as more or less efficacious febrifuges by different practitioners, but in spite of several cases of intermittent fever and ague having been cured by them, the cinchona alkaloids still keep their place in the market.

One of the most important revivals was the re-introduction of the compound ammonia described by the English, Russian, and American therapeutists as propylamine, and by the French as trimethylamine. Leaving, for the moment, the question as to whether the solution used contained trimethylamine, propylamine, their isomer methylethylamine, or a mixture of all three, we may speak of this much-vaunted remedy by the name under which it is best known in England and America—propylamine. Propylamine in solution was first used in 1854 as a remedy for acute and chronic articular rheumatism by M. Avenarius, of St. Petersburg, M. Kaleniczenko, of Charkoff, and Dr. Guibert, of Brussels, the first-mentioned therapeutist claiming to have cured more than 250 bad cases by it in two years. The solution of propylamine used by MM. Avenarius and Kaleniczenko was obtained from cod liver oil, and is said by them to be much more active than that prepared from salt herring brine. From Russia the use of propylamine spread to America, where it was introduced with great success by Professors Proctor and Parrish. Whether its efficacy was doubted or not by European therapeutists cannot now be known, but it was only coldly welcomed in England, France, and Belgium. In 1863 a few isolated experiments were made by Professor Coze, of Strasburg, and Dr. Desnos, of Paris, after which propylamine and its compounds seemed to drop out of use until 1872, when they were once more brought into notice by Dr. Gaston, of Indiana, and Dr. Namies, of Venice, the latter using them as diuretics and as substitutes for digitalis in the treatment of diseases of the heart. Stimulated by these researches Dr. Dujardin-Beaumetz, of Paris, took up the subject once more, and repeated the treatment adopted by Avenarius, Kaleniczenko, and their followers, with such success that it was again tried in every country in Europe. Dr. Dujardin-Beaumetz found, however, that although his patients were anxious to try any remedy that was likely to relieve their sufferings, they made very strong objections to the abominable odour of the alkaloidal solutions, objections the value of which will be fully appreciated by everyone who has had the misfortune to pluck a leaf of the ordinary stinking goosefoot (*Chenopodium vulvaria*), the glands of which secrete and exude propylamine, or one or all of its isomers. Dr. Dujardin-Beaumetz consequently employed M. F. Wurtz, of the Paris Pharmacie Centrale, to prepare for him the hydrochloric salt of the pure alkaloid, trimethylamine, apparently without being aware that this salt had been introduced into practical pharmacy in the United States as far back as 1857, as the principal ingredient in a preparation known as Propylamine Cordial, a compound of propylamine hydrochlorate, alcohol, syrup, aniseed water and saffron. Commercial propylamine, which is generally prepared from salt herring liquor, was naturally found to be extremely variable in composition: a commission was therefore appointed by the Paris Pharmaceutical Society to inquire into the matter. The reporters decided that the solution of the alkaloid prepared from salt herring liquor, and used by Dr. Dujardin-Beaumetz, consisted principally of trimethylamine mixed with ordinary ammonia, and was not propylamine. They consequently recommended that the former alkaloid should be prepared direct from methylic alcohol. It was also found that the alkaloidal solution known as propylamine varied in strength very considerably, some specimens containing ten times as much of the mixed alkaloids as others. Such being the case, it is not surprising that utterly discordant results should have been arrived at everywhere; in fact, M. Gubler, a French therapeutist, who had experimented largely on propylamine, hit the right nail on the head when he said that truly scientific experiments upon the subject would never take place until we were in possession of one or more well-defined and always identical substances. True trimethylamine hydrochlorate was prepared by synthesis from methyl iodide by M. Wurtz, but it was too late. Therapeutists had found that the impure compound gave variable results: the consequence was that propylamine and its relations, pure or impure, came to be looked upon as untrustworthy remedies, and they once more fell into disuse. The substance attracted a good deal of attention in the chemical world, and M. Rabuteau, the eminent French toxicologist, made a series of experiments on the toxic and other physiological effects of the artificial ammonias, and arrived at a very interesting result, which in good hands ought to bear fruit. It would appear from M. Rabuteau's experiments on dogs that the amines, whether primary, secondary, or tertiary, are, when injected into a vein, similar in their action to ordinary ammoniacal compounds, whereas the salts of such bases as tetramethylammonium and tetramylammonium appear to act in a precisely similar manner to the Indian arrow poison, curara, causing speedy death by paralysing the motor nerves, whereas the salts of the amines only slowly paralyse the muscular system. In other words, in compounds where all the four atoms of hydrogen of an ammonium compound are replaced by organic radicals, the resulting salt is a virulent poison. An example, perhaps, will make this clearer. Two grains of trimethylamine hydrochlorate were dissolved in 40 grammes of water, and injected into the veins of a dog. A slight diminution of the circulation and of the animal's temperature were the only effects observed. Less than a fourth of the same quantity of tetramethylammonium iodide was administered in a similar manner to another dog, the animal becoming violently agitated: the respiratory movements ceased almost immediately, and the heart, which was at first accelerated, slackened, and finally stopped in three or four minutes; in fact, the animal exhibited all the signs of having been poisoned by curara. These experiments are interesting from a chemical point of view, inasmuch as they tend still more to widen the division between the ammonia and ammonium bases. The difference, for instance, in the chemical composition of, let us say, trimethylamine hydriodate and tetramethylammonium iodide is simply that the latter compound contains one atom of carbon and two atoms of hydrogen more than the former. The wide divergence in their physical, chemical, and physiological properties must therefore be put down to the difference that must exist in their molecular constitution rather than to the slight variation in their chemical composition.

The triumphs of hydrate of chloral are too well known to every therapeutical student to need detailing here. Used at first in grains, it is now used—and misused too—by the hundredweight in every civilised country in the world.

Amylnitrite has made its way just as surely, although much more slowly, than chloral hydrate. The introduction of this compound into practical pharmacy is mainly due to the researches of Dr. B. W. Richardson into the physiological and therapeutical properties of the methyl, ethyl, butyl, and amyl series, carried on over a space of five or six years, and published in the "Reports of the British Association" for 1864, 1865, 1866, 1867, and 1868. A careful study of its physiological properties upon himself and others soon showed that this compound possessed the power of accelerating the action of the heart in an extraordinary degree. Drs. Bruton and Anstie applied it most successfully for the purpose of alleviating the spasms of angina pectoris. The property it possesses of diminishing excessive spasmodic action led to its application in cases of tetanus, several of which were treated successfully by the late Mr. Foster, of Huntingdon, the spasms in one instance being held in check for nine days. In spasmodic asthma, dyspnœa, cholera, and colic, it has also been of great service, and is in daily use amongst a large number of our most eminent practitioners. Isolated experiments have also been made with this valuable compound in cases of drowning, fainting, sunstroke, lightning stroke, and in syncope from chloroform.

I have specially chosen the so-called propylamine and amylnitrite from amongst the rest of the purely chemical remedies adopted or suggested during the last ten years because the failure of the one and the success of the other throw an immense amount of light on the causes which have led to the introduction of so few purely chemical remedies into our materia medica, not merely during the last decade, but during the last half century.

Medical practitioners may be divided into two principal classes—conservatives and radicals; but half-way between the two we find a compact phalanx of liberals, whose ranks, luckily for the profession, are increasing every day. The conservatives set set their faces against all new remedies, for the very reason that the radicals seize so eagerly upon them—because they *are* new. If a new remedy has a chemical name, more especially if it be a long one, the conservatives condemn it at once, their love for galenicals being as strong as their hatred of chemistry. The radicals, on the other hand, rush at every novelty, try it half a dozen times, without attempting to make any systematic observations on its action, and then throw it over because it was not an absolute specific. We need not say what the liberals do, for it is to them we owe the permanent introduction of so many valuable remedies, both chemical and galenical. But a medical man may be as liberal and painstaking as he chooses, and yet have no time to make chemical, therapeutical, and physiological researches. Liebig used to say that it was a rarity to find a chemist who was a physiologist, or a physiologist who was a chemist; but it is a still greater rarity to find a man uniting the qualifications of therapeutist, physiologist, and chemist. To introduce or even experiment on a new remedy requires a combination of knowledge which ought to be spread over at least a couple of brains. The introducers of propylamine all failed, simply because their chemical instinct was not sufficiently alive to the fact that the compounds they were using were about as definite in their composition as a cup of tea. When Liebreich and Richardson began their experiments, the one on chloral hydrate, the other on amyl-nitrite, they were careful to procure the very purest specimens of the compounds they were using. Hence, in a great measure, the comparative facility with which these remedies were taken up by the medical profession. It did not seem to strike M. Dujardin-Beaumetz and his predecessors that a heterogeneous and constantly varying compound must necessarily produce anomalous results, and it seems a thousand pities that M. F. Wurtz and the French Pharmaceutical Commission did not go to work earlier.

We have said before that to introduce a new remedy successfully requires a man of singular accomplishments and knowledge, which are very rarely to be found in one individual, so that to carry out such experiments successfully two or even three ought to work together. At one time such a union would have been difficult, if not impossible. Both medical and pharmaceutical students are becoming better chemists every day. The days of senseless cramming are, we hope, numbered, and the successful student of 1877, whether he is to compound or prescribe medicaments, must show something more than mere book knowledge with regard to the substances that compose them. Far be it from us to say one word against purely scientific research, but if we take up any of the current chemical periodicals of the day, whether English or German, French or Russian, we cannot help being struck with the very small amount of practical research that seems to be going on in the laboratories of the world. Surely we have dyes enough to last us for some few years, and as to new compounds we have not yet discovered the properties of one ten-thousandth part of those whose more or less sesquipedalian names we pronounce so glibly every day. In an article on "The First Principles of Chemistry" in the *Philosophical Magazine* for January, 1876, Dr. E. J. Mills truly says: "How much more profitably a student's time would be occupied in examining the commonest definite equations than in trying to find out what is the position of the third bromine atom in tribromobenzol." It is, however, to be feared that chemical students of the present day are too much given to run after new compounds, and they seem to think that the great object of chemistry is to squeeze atoms of hydrogen, chlorine or oxygen, as the case may be, into compounds in which they have not previously been known to exist. They seem to forget that the object of science is not merely the pursuit of truth, but that one of the noblest aims ought to be the discovery of substances that may administer to the wants or comforts of our fellow creatures, bring ease and strength to the writhing sufferer, or restore the dying patient to life and health.

The pharmaceutical student who has passed the Minor and Major examinations with honour, and who still works with the test-tube and balance from pure liking, is forced by the circumstances of his profession to make his researches take a practical direction. For this reason he ought to be able to co-operate more readily with his medical brothers in the pursuit of new remedies. A couple of earnest students, one pharmaceutical and the other medical, working together in this way, could not fail to light on most valuable discoveries. There is no need to search for new compounds; there are thousands of substances—acid, alkaline, and neutral—within easy reach, of whose physiological properties we are utterly ignorant. The pyridine and picoline series of bases, which, according to MM. Vohl and Eulenberg, are the active agents in tobacco smoke, have a strong toxic action on the human subject, as is patent to every smoker, but their physiological action for good or for evil is quite unknown. Until within a few months the aniline dyes were supposed to be poisonous, but it has now been discovered that their supposed poisonous properties were due to arsenical impurities. The most unexpected discoveries too, may crop up in the most unlikely places. Who, for instance, could have supposed that the artificial ammonia bases were comparatively harmless, while the ammonium bases were fearful poisons? Or that amyl compounds would differ so greatly in their physiological action from their near relations, the compounds of methyl and ethyl? When Liebig discovered chloral and Soubeiran chloroform, they little thought that these compounds would one day be the means of saving thousands of lives. How many more substances equally precious as remedies may there not be lying hidden away in the recesses of laboratory cupboards or on the shelves of museums. It is for the pharmacist who is also a chemist, working hand-in-hand with the therapeutist who is also a physiologist, to bring them out of their obscurity, and by systematic experiment to discover which of them are capable of assuaging the agony, restoring the health or saving the lives of their fellow men.

## SOLUBILITY OF ALOES IN GLYCERINE.

When aloes is treated with glycerine in the cold it slowly dissolves, forming a dark but transparent solution, more or less viscid, according to the amount of aloes held in solution. If a gentle heat be applied to effect solution it will be found that the aloes is completely soluble in the glycerine to any extent, so that, from having a thick treacle-like fluid, when treated in about equal proportions, we may have a mass gradually thickening until it reaches a soft, or even a hard pilular consistence by simply reducing the proportion of glycerine. In this last condition the mass is permanent when excluded from air, but when exposed it softens very considerably, the outer surface of the mass getting damp, apparently absorbing moisture from the atmosphere. We mention this action of glycerine on aloes to recommend its more general use in the making of balls, drenches, &c., in veterinary practice, a use to which we have now put it for several years with very great success. The hint will be all that will be required by those who are familiar with, and probably still practise, the old methods of making these preparations given in most veterinary receipt books. But apart from the superiority in neatness, cleanliness, and expedition of the glycerine method, aloes so prepared possesses many very important advantages, which are of themselves so valuable as to deserve special recommendation. Chief amongst these are that its action is more quick and energetic, and attended with less irritation than when given in other ways. These characteristics are so marked that we have frequently considered that a more extensive use of a combination of glycerine and aloes might well be introduced into general medical practice. It has been long known that aloes in combination with certain substances acts not only more energetically but less disagreeably even where these substances themselves have no medicinal activity, but we are not aware that this property has ever before been ascribed to glycerine. It is true that glycerine has frequently been recommended as an excipient for pills containing aloes, but it is also true that where employed successfully, that is to say wherever it forms a pill of good consistence, which will not soften and fall, it generally has to be fenced with one or more special ingredients. somewhat after the manner of the quacks' powders, one of which is given to produce perspiration, a second to act as a refrigerant, and a third to prevent the excessive action of both. Apart from this fact, however, it should be observed that it is not in proper combination where only used as an excipient, so that its utility cannot be properly tested in this manner.

## MERCURY.*

Of all drugs to give rise to controversy none can compete with mercury, which has set by the ears therapeutists of every school. It is not alone that the empirical clinician has opposed his experience to the experimenters, but these have not agreed among themselves. If, therefore, a few notes on recent researches be thought to contradict those of prior observers the fact will not be unexpected. At the same time a collation of some of the facts and opinions will perhaps be of service to those who desire to compare their experience with the speculations and observations of others.

Although the mouth is so generally the first part in which mercurialisation becomes manifest, it sometimes happens that other organs are previously affected. Thus we now and then find the earliest indications falling upon the nervous system. This is specially likely to occur when the drug finds its entrance through the lungs. Those cases, it is true, generally occur after long exposure to the vapour of mercury, but they may be caused with great rapidity, as in a case related by Professor Christison, in which a single night's exposure brought on a shaking palsy which was never cured. But such cases are happily exceptional, and it is only gradually that grave evils are likely to be produced. On the other hand, it should be stated that a single dose of mercury is capable of exercising a very wide-spread influence. This is seen, not only in the rare cases in which the drug cannot be safely taken at all, but even when no idiosyncrasy is apparent. Thus, not only does it exercise a marked influence on the quality of the blood, but it finds its way into all the secretions and, very probably, into all the tissues. In proof of this we need only refer to the numerous experimenters who declare they have readily detected it, not merely in the urine, fæces, and saliva, where it might be anticipated, but in the serum, and pus from ulcers, as well as in all the normal textures. The researches of Mayençon and Bergeret go still further, for they show that the absorption and elimination of the drug proceed with great regularity. When a dose of corrosive sublimate was administered subcutaneously to an animal mercury could be detected in the urine for twenty-four hours afterwards, but not longer, showing that a single dose does not remain in the system. Where, however, an animal was dosed regularly for ten or twelve days, the mercury could be detected for four or five days after the drug was discontinued. Again, they found that mercury could be detected in the liver and kidneys, and in lesser quantities in nearly all, the tissues, half an hour after a dose had been given. So rapidly then does it penetrate in all directions, and so certainly does some of it remain in the system where repeated doses are given. That is to say, argue some, elimination cannot keep pace with repeated ingestion; but this is not an adequate explanation of the facts, for it was found that after a mercurial course, when the urine no longer exhibited traces of the metal, the ingestion of iodide of potassium at once caused its reappearance. Here we have a most important scientific corroboration of the valuable clinical fact respecting the elimination of mercury by the iodide. Even after no mercury had appeared for 48 hours, it reappeared after taking iodide of potassium, and could be recognised for 72 hours afterwards. If, then, this metal is so rapidly absorbed, is detained in the tissues so long, and yet may be eliminated afterwards, it is not surprising to find its effects so extensive, and now and then so unmanageable.

That the blood is altered in quality by mercury has long been recognised. The fibrin, albumen, and red corpuscles are all diminished in quantity, and a certain fœtid matter seems to be developed—probably of a fatty kind. Wilbouchewitz has also utilised the *comptes-globules* to show that the red corpuscles are diminished in number. We are aware that this has been denied, and some have asserted that an exactly contrary effect was produced. But they referred only to clinical experience of the effect in disease, and therefore confused two distinct questions. It is quite credible that a drug which in health diminishes the number of the red corpuscles should in certain conditions appear to increase them. In this very instance no one doubts that the so-called anæmia, or rather cachexia of broken down syphilitic patients, may pass away under the influence of therapeutical doses of mercury. But this is an indirect effect. The mercury acts by curing the syphilis, and so restoring the power of nutrition, not by its direct action on the corpuscles, which would rather suffer from the effect of the drug, and this truth is illustrated by the many cases in which mercury has aggravated the evil—either because too much has been given, and so the physiological effect produced on the blood, or because for other reasons it was inappropriate. Perhaps there are special conditions in which such a result may be generally expected. Then it is the part of the clinical observer to discriminate, and the more carefully this is done the more thoroughly will science and clinical observation go hand in hand.

The effects on secretion and excretion correspond with the absorption and detention of mercury in so many tissues. but whether those effects are due to a direct action on the cells is not easy to determine. The profound effects on all the organs seem to point to some influence over the process of nutrition as well as to a generally diffused action on the tissues. The idea that this metal causes excessive waste of the *nitrogenous* textures has not been confirmed to any great degree by experiment, though that it increases general waste is obvious from its most familiar effects.

With regard to the manner in which the investigation into the absorption and elimination of mercury has been carried on, a few words may be added. The most delicate test of the metal in the secretions prior to the use of electrolysis for this purpose was sulphuretted hydrogen, and this certainly would not detect less than 0·005 gr. of bichloride in 500 c.c. of distilled water. The electrolytic test will make manifest 0·001 gr. in the same quantity. But this very delicacy is a cause of difficulty at times, since impurities derived from the battery or the fluids experimented on are liable to interfere with the results. Schneider advised that the substance to be examined would first of all be freed from all organic matter by hydrochloric acid and chlorate of potash, then evaporated until free from chlorine, fresh water being added and the whole tested by the current in the evaporating dish.

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* From the *Medical Examiner*.

Hamberger has employed a similar method in a recent series of experiments which deserve attention. He used six Daniel cells with platinum and gold wires to the copper and zinc poles. The current was allowed to act on the fluid for twenty or twenty-four hours. Then the gold wire was washed, placed between blotting paper, and heated in a hermetically sealed tube. The wire having been removed, iodine was put into the tube, which was then once more sealed and heated, when crystals could be recognised by the microscope if mercury had been present. The results obtained by Hamberger's experiments, reported in the *Prague Med. Wochensch.*, are not uniform. In a case treated by suppositories no mercury was found in the urine during the first four days. After the same patient had been thus treated for a fortnight inunction was employed. From the eighth to the fifteenth day of inunction the urine was collected, and gave indications of mercury. A nursing woman was treated by suppositories, and the urine from the fifth to the fourteenth day contained mercury. Her milk also contained the metal. The suppositories were now discontinued in the same patient, and inunction resorted to. After eight days mercury was found in the urine, but not in the milk. A man was put on inunction, and the urine and fæces both gave evidence of mercury.

From these experiments Hamberger thinks the opinion of Kohler must be accepted, that mercury by inunction does not affect the milk. But it seems always to be found in the urine and fæces. If we desire to affect the milk in order through it to act upon the child, it would seem that we can do so by means of suppositories.

## TRADE MARKS AND PATENT MEDICINES IN AMERICA.

AMERICAN writers lay it down that the owner of a quack medicine that has obtained a reputation for its wonderful qualities is not entitled to the protection of the Courts to restrain another person placing a similar medicine upon the market, on the ground that, as the owner's medicine is a fraud, the Court will not interfere to protect it; and they go further by saying that if the medicine be genuine, but the statements on the trade mark or label untrue, the Court will not interfere to protect it.

A case which illustrates the American practice may be cited (Hobbs *v.* Francais, 19 How. Pr. Rep. 567). There the plaintiff's label was as follows "Patronised by Her Majesty the Queen—'Meen Fun,' the celebrated Chinese Skin Powder, for restoring, beautifying, and preserving the skin and complexion, preventing cutaneous eruptions, chapping, and obviating too copious perspiration. Adapted for all climates. Fabian & Co., sole proprietors, 24 St. Martin's Lane, London." The Court refused to restrain a rival manufacturer who copied this label, on the grounds—1st, that the proprietors were said to reside in London, while they really dwelt in New York; 2nd, that the Queen was probably ignorant of the virtues, or even the existence of the preparation; but that the statement that it was made in England, and patronised by the Queen, induced American ladies to use it; and that, therefore, being based on misrepresentation, the Court would not protect it. It would seem, from the American law, that no patent medicine that proposed to cure all the ills that flesh is heir to would be entitled to protection in the American Courts. In one case, where the suit was to restrain an imitation of the "Balsam of Wild Cherry," which professed to be a valuable family medicine, curing all ills possible in families, the Court held that the group of specified diseases was so incongruous that the medicine could not by any possibility heal all, that it must therefore be a fraud, and so was not entitled to protection.

## CALOMEL LOZENGES.

A MEDICAL contemporary calls attention to a discussion going on in the Italian pharmaceutical world. The Sicilian observer refers to a case of poisoning, which arose from taking some calomel and sugar that had been mixed a month previously. On examining what remained of the mixture it was found to contain corrosive sublimate. The *Pharmaceutical Journal* of Turin reports an analogous case, indicating the effects of calomel comfits, and explains them by the action of the organic matter in sugar, which changes the calomel into a bichloride. The quantity of corrosive sublimate appears to bear a proportion to the time which has elapsed since the preparation of the comfits. As our contemporary points out, it would be necessary to show by previous testing that the calomel employed had been perfectly pure before these facts can be fully accepted.

## THE CARRAGEEN CROP.

A RECENT number of the *Scientific American* gives the following information concerning *Chondrus crispus*, incorrectly called in that journal Carrigeen. This production, familiarly spoken of as Irish moss, is known chiefly as the basis of a pleasant and wholesome drink for the sick room, or as an article of use in the preparation of delicacies for the table. Comparatively few are aware of its wide and varied uses in the arts, or that the thousands of barrels of it employed annually by our manufacturers of paper, cloth, felt, and straw hats, &c., and by brewers, is not an Irish, but an American product, and, speaking strictly, is not a moss, but a seaweed.

Carrageen is to be found more or less abundantly all along the northern coast of America, ranging between the low water line and the depth of forty feet or so; but as a rule its fronds, which correspond to the leaves of air plants, are so numerously inhabited by small mollusca that they are spoiled for other use. The clean-growing article seems to be limited almost wholly to certain ledges in the neighbourhood of Scituate, Mass.—a section of coast guarded by the celebrated Minot Ledge Lighthouse, and famous for its danger to shipping. Here, where the waves of the Atlantic dash with full force upon the rocky coast, the carrageen grows to perfection; and wherever it escapes the spawn of mussels and other shellfish, is gathered during the summer season in vast quantities.

The harvest begins in May and ends about the first of September. The gathering is made in two ways—by hand-picking during exceptionally low tides, and by means of long-handled iron-toothed rakes at ordinary tides. Of course the work can be carried on only during fair weather. Hand-pulling is possible only during the bi-monthly periods of spring tides, that is, when the moon is full and again at new moon. At such times high tide occurs about midday and midnight, and the ledges are exposed for moss gathering morning and evening. The mossers' boats are rowed to the rocks where the finest grades abound, and the gatherers select with great care the growths that are freest from minute shells and other foreign matter. This portion of the crop, if properly handled afterwards, generally goes to the apothecary, and fetches a price two or three times that of the common grade.

As the tide rises the pickers are driven to their boats, and proceed to the outer moss-bearing rocks, where the rake is used, as it also is during ordinary low tides. Moss taken in this way is not so clean as the hand-picked, and is always mixed with tape grass, which must be removed during the process of curing and packing.

The curing of the moss is the most critical part of this peculiar farming. On being brought to the shore the moss is black and unsightly; it must be bleached as well as dried. The bleaching is effected by repeated wetting and drying in the sun; and as the moss is readily soluble in fresh water the bleaching beds are situated near the banks of the salt creeks that abound along the shore. After drying, the moss is packed in tubs and rolled to the water, where it is thoroughly washed, then rolled back to the bleaching bed, to be dried again in the sun. Five or six such exposures are usually sufficient. On the bleaching ground the moss is carefully spread and turned, and watchfully guarded against wetting by rain. In this process it turns from black to red, then to the yellowish-white of the perfected article. When properly cured the moss is stored in bulk, in shanties, where, as time permits, it is picked over and packed in barrels. The crop averages about half a million pounds a year; and thanks to the brighter and more abundant sunshine of the American coast, the moss has a brighter colour and is of finer quality than the Irish product.

## THE OTTO OF ROSE REGION.

It is probably not generally known that the region in which General Gourko has been lately operating with his Cossacks is the land whence by far the greatest quantity of attar of roses comes to Western Europe. Kasanlik, the name of which has so often figured during the past fortnight as a point of strategical importance, is also the centre of one of the most remarkable species of horticulture, or rather agriculture, to be found in the whole world. Around it, or near it, are the districts of Cirpan, Giopça, Karadshah-Dagh, Kojun-Tepe, Jeni-Saghra, all of which are devoted to this peculiar husbandry. The Mussulman tradition assigns the origin of the rose to the night of Mahomet's journey to Heaven. The white roses sprang from the drops of sweat which fell from the blessed forehead of the prophet himself in the toilsome ascent; the sweat of Borak, the miraculous animal he rode, gave birth to the yellow ones; while the celestial drops which fell from Gabriel were the source of the red rose. The appearance of the neighbourhood of Kasanlik would favour a suspicion that the heavenward journey must have sorely tried the Archangel; and Count von Moltke, who was well acquainted with Bulgaria and the Balkans, has styled the valley of the Tundja "the Cashmere of Europe, the Turkish Gulistan, the land of roses." Roses are not grown there as with us, in isolated patches in gardens, but in fields and in ridges as if they were no better than potatoes. It would be difficult to imagine anything more charming than the appearance of those rose fields; and any painter who should attempt to reproduce this picture would assuredly be charged with exaggeration. But it would be impossible to catch the infinite alternations of colour both among the roses themselves and the green leaves of the shrubs. Hundreds of millions of rose leaves strew the ground and are useless for the chief object in view. It is calculated that about one-fourth of the leaves are lost in this way; perhaps as many more either fail to come to the requisite perfection, or are unavoidably wasted. The entire produce of the Tekne, or region, of which Kasanlik is the centre, is estimated at between 800 and 900 kilogrammes (from 195 to 220 imperial gallons) of rose oil. The wealth of water in the valley is prodigious; springs are not only numerous, but most abundant in yield. There is a general system of irrigation, which, remembering that the country is Bulgaria and not Lombardy, is admirable. The whole valley was a picture of prosperity, the result of natural fertility carefully tended by human industry. When roses are not cultivated, heavy crops of maize are gathered, and along the slopes and down by the waterside are numerous herds and flocks. Kasanlik itself is a town of 10,000 inhabitants, and is surrounded by magnificent walnut woods, which also are a source of commercial industry. Von Moltke speaks of the situation as one of the rarest beauty. Many of the trees, he says, cover an extent of 100 feet with their spreading branches, while countless wild pigeons fill the woods with their cooing. The murmuring or the rush of waters is heard in every direction; the sky itself presents perpetually changing aspects by reason of the neighbouring mountains; while the deliciously fresh air is redolent with delicate perfume. About 25 miles to the south-east of Kasanlik, and divided from the Tundja valley by a range of hills, is Eski-Saghra, a town of 18,000 inhabitants, also a notable industrial centre, the best silk and the finest wheat in Turkey being produced in the surrounding district. With such diligent husbandmen, a moderately fair Government would soon make the whole of Southern Bulgaria the richest and most productive country in Europe. The campaign of which these beautiful and fertile valleys are now the theatre will have probably ruined the rose culture, at least for many a year.—*Times*, August 9.

* It generally turns out that the march and conflict of armies does far less damage to the products of the district occupied than is at first anticipated. But the rose crop is a peculiarly delicate one to interfere with, inasmuch as the plants require not less than five years' growth before they arrive at maturity.

## LIST OF AWARDS AT THE SOUTH AFRICAN INTERNATIONAL EXHIBITION.

The following have an interest to pharmacists:—

### Diplomas of Honour, with Gold Medal.

| | |
|---|---|
| Price's Patent Candle Company, London | Candles, Soap, &c. |
| T. & H. Smith & Co., Edinburgh ........ | Chemical Preparations |
| Young's Paraffin Light and Mineral Oil Company (Limited), Glasgow ........ | Oils, Candles, &c. |

### Gold Medals.

| | |
|---|---|
| Burnard, Lack & Alger, Plymouth .... | Chemical Manures |
| Cantrell & Cochrane, Dublin .......... | Mineral Waters |
| J. M. Farina, Cologne .................. | Eau de Cologne |
| S. Hemingway & Co., Bradford ........ | Dry Soap and Starch |
| J. Hickisson (formerly Bond), London .. | Marking Ink |
| E. James & Sons, Plymouth .......... | Starch, &c. |
| Wm. Johnson & Co., Cape Town ........ | Chemicals and Aërated Waters |
| J. M. Johnson & Sons (Limited), London | Show Tablets |
| J. Luce, Jersey ........................ | Eau de Cologne |
| Pontifex & Wood, London .............. | Distilling Apparatus |
| Richardson & Co., Leicester ............ | Medicine Chests, &c. |
| E. Rimmel, London ...................... | Perfumery |
| T. & H. Smith & Co., Edinburgh ...... | Essence of Coffee and Aërated Waters |
| Southall Bros. & Barclay, Birmingham .. | Cod-liver Oil |
| P. Veneatachelluu, Madras ............ | Indian Condiments |

### Silver Medals.

| | |
|---|---|
| Geo. Cheavin, Boston .................. | Filters |
| Day, Son, & Hewett, London............ | Cattle Medicines, &c. |
| Gossage & Sons, Widnes .............. | Soaps |
| Guichard & Co., Paris ................ | Barometers |
| S. Hemingway & Co., Bradford.......... | Baking Powder, Corn Flour |
| J. Mackay, Edinburgh .................. | Flavouring Essences, &c. |
| Mackay, Sellers & Co., London .......... | Drugs and Perfumery |
| T. Mulvihal, Cape Town ............ | Aërated Waters |
| MacDougall Brothers, London .......... | Sheep Dip |

### Bronze Medals.

| | |
|---|---|
| Barnett, Son, & Foster, London ........ | Soda Water Machinery |
| Dr. Garau, Milan ........................ | Insect Powder |
| Gabriel & Co., London ................ | Artificial Teeth |
| Dr. Schrombgens, Kaldenkirschen ...... | Digestive Bitters |
| J. Sinclair, London .................... | Baking Powder |

## DAVYUM, THE NEW METAL.*

At the end of June (says M. Serge Kern) I succeeded in isolating a new metal belonging to the platinum group. I have named it Davyum in honour of Sir Humphrey Davy, the eminent English chemist.

The platiniferous sand used had the following composition:—

| | |
|---|---|
| Platinum .. .. .. .. .. .. .. | 80·03 |
| Iridium .. .. .. .. .. .. .. | 9·15 |
| Rhodium .. .. .. .. .. .. .. | ·61 |
| Osmium .. .. .. .. .. .. .. | 1·35 |
| Palladium .. .. .. .. .. .. .. | 1·20 |
| Iron .. .. .. .. .. .. .. .. | 6·45 |
| Ruthenium .. .. .. .. .. .. | ·28 |
| Copper .. .. .. .. .. .. .. | 1·02 |
| | 100·09 |

The mineral (600 grammes) was treated for the separation of the metals by Bunsen's analytical method. The mother liquors obtained after the separation of the rhodium and iridium were heated with excess of ammonium chloride, and nitrate. A deep red precipitate was obtained, which gave, on calcination, a greyish mass, resembling spongy platinum. Fused before the oxyhydrogen blowpipe, this sponge gave an ingot of the colour of silver, weighing ·27 gramme. The density of davyum is 9·385 at 25° C.; the metal is hard, but malleable at a red heat.

Davyum is easily attacked by aqua regia, and very feebly by boiling sulphuric acid. Sulphuretted hydrogen, passed through a dilute acid solution of davyum chloride, produces a brown precipitate, which turns black on drying. Sulphocyanide of potassium, in a similar solution, produces a colour like that of sulphocyanide of iron. If the solution of davyum and of KCNS be concentrated, a red precipitate is obtained.

I think that in the classification of elements proposed by M. Mendeleef, davyum is the hypothetic element placed between molybdenum and ruthenium. In this case the equivalent of davyum should be 100.

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* From *Le Monde Pharmaceutique* of July 20, 1877.

I hope to be in a position, in the course of a few months, to communicate the results of new experiments on the physical and chemical properties of davyum. The new element appears to be rare in nature, the platinum sand containing not more than ·045 per cent. of davyum.

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## NAMES OF BRITISH MEDICINAL PLANTS.

*A Digression.*

By W. G. Piper.

In a previous paper I called special attention to the fact that the Coccus was liable to putrefaction, and that small worms readily showed themselves in its substance. On this account it was called Vermiculus, both in Classical and Mediæval Latin. Gervasius Tilbrensis, writing in the thirteenth century, says definitely that the fact just mentioned suggested the name. He says:—"Hinc est quod vermiculus nominantur quod dissolutionem quam in vermes facile facit. . . ."

The word vermiculus was used in three senses. The primary meaning was that of little worms, such as are found in decaying things. A second meaning derived from this was a disease of dogs which drove them mad. It is still supposed by some that dogs have under their tongue a little worm which, sooner or later, maddens them. The process of "worming," now rarely practised, consisted in removing this supposed worm, which is really the frænum, or cord under the tongue. This curious association of worms and madness suggests some hidden connection, the more so that the Anglo-Saxon word "mad" was the synonym of vermiculus. Nevertheless, I have not been able to satisfy myself of the reality of the connection. The third meaning is that with which we are more immediately interested, namely, the Coccus insect, or rather the collected drug. As a necessary sequence to this meaning, vermiculus soon came to mean the scarlet colour obtained from the insect, and in later years cloth so dyed was called vermiculatus.

The origin of the word vermiculus is even plainer than its application. It is the diminutive of vermis. Everyone knows the ease with which *v* is changed to *w* on uneducated tongues, and need only be reminded of it to see the close relationship of vermis to worm. Worm is not derived from vermis, but both are from one common stock. Vermis itself comes from the root "ver," meaning to twist or turn. This root is perhaps connected with more English words than any other. From the verb "verto" alone we get nearly two hundred words, and this is but one line of the descendants of "ver." One of the most curious derivatives of "ver" is "verse," from the Latin "versus." The primary meaning of "versus" is, a turning. The most striking peculiarity of ploughed furrows are the turns made at each end by the plough. Many things are straight; very few things are made straight by continual turning. Hence "versus" came to mean a furrow. In olden times writing travelled always from left to right, as it still does in many languages. In the next stage the lines travelled backwards and forwards, across the page alternately from left to right and right to left; in fact, just as a plough travels across the field. What more natural than that the lines should be called verses or furrows. When poetry consisted of rhythmical lines, the name of verse was adopted for each stanza, and each line was called a verse. When in later years rhyme was introduced in the unclassical languages the name verse was retained for each complete metrical arrangement, although it might contain many lines.

In later ages, when each man did what was right in his own eyes, and, among other things, made his own language, vermiculus became corrupted exceedingly. In Ducange's "Glossary of Mediæval Latin" and elsewhere we find all the following forms: Vermiculum, vermellum, vermelhum, vermelius, vermilius, and vermilium. In mediæval French vermilion was the name of this scarlet dye. And from the same source came the cognate names—the modern French vermeil, the English vermilion, the Dutch vermilioen, the Italian vermiglio, and the Spanish bermejo. When the insect-dyed scarlet fell out of use the name vermilion was transferred to the brilliantly coloured mineral which still contains it.

Another name now calls our attention. It is well known that when the Arabs overran Europe they subjugated not only the physical but the intellectual possessions of their opponents. Entering Europe before the older authors had been quite forgotten in the general decay of intelligence, they proved themselves such wise conquerors that it is to them alone we owe the preservation of many Latin and Greek works. The Arabians translated them into their own language, so that when the originals were lost the works could be recovered from the Arabic copies. The Arabians hardly had an intellectual history before this time, so that when we find an Arabic name we are uncertain whether it will be a genuine Arabic word or a copy from the Latin or the Greek.

The Arabic name of the Coccus insect is Kermes, and from the few facts I have access to and the smaller knowledge I can bring to the subject it seems to me that in this name we have the Latin name Vermiculus disguised by dialectic changes. Kermes means exactly the same as Vermiculus. The change of *f*, *v*, or *w* to gutturals, and especially to *q*, *kw*, *gu*, or *gw* is common to many languages. Guerre (French) represents the English war. Guardian is warden. Gaul and Gael are the same word as Wales. Five is Quinque. Fir is Quercus. German is warman. Kermes itself is spelt in many ways, according to the fancy of the transcriber who had to represent in his own language the sound of the Arabic, hence we have in various languages kermes, karmes, alkermes,* alkarmes, chermes, chesmes, alcharmes, cremese, cremesino, guermez, alquermes, and quermes. Probably several other forms would be discovered by a careful search. Either of the three central forms, kermes, charmes, or quermes, might be derived from vermes by the change of *v* to a guttural. So, I think, we are justified in concluding that kermes is the Arabian form of vermiculus. Other derivations have been proposed for this word. One philologist would derive it from the Keltic, that convenient source of the unknown. *Guer* or *Quer*, the root of *Quercus*, is a Keltic word, meaning first green, then an oak. *Mas* or *Mes* is the fruit or *mast* of the oak and a few other trees. Quermes or guermes, if it were a Keltic word, would hence mean the fruit of the oak. For many centuries the Coccus was supposed to be the fruit of the tree on which it was found, and within the last two centuries the same was stoutly maintained of the cochineal, so that popular error supports this derivation. But it remains to be proved that the Arabians ever had any direct communication with the Kelts.

The Arabic name for the dye as distinct from the dye stuff is said to have been Quermezy. Following this word through the different languages, we find that in the Italian chermes is the drug and chermisi the crimson colour produced by it. Other forms of chermisi are chermisino and cremese. In old French we have cramoisyn, in modern French cramoisi. In old English crimosyn and cramosin, in modern English crimson. From chermisino we get carmine and its variously-spelt equivalents in other languages.†

According to some authorities scarlet is also derived from kermes. It is quite a modern word. Dillon says it was first used by Roderick, Archbishop of Toledo, in his history of Spain, finished A.D. 1243. Cæsarius used escarletum or scarletum in 1227. Matthew Paris, writing about the year 1245, used the word in speaking of the year 1143. Henry III., of Germany, conferred special privileges on the Count of Cleves, in the year 1050, on the condition of his delivering annually "tres pannos scarlitinos Anglicanos," three pieces of scarlet English cloth. Somewhere between the eleventh and thirteenth centuries the word took its rise. One would think there would be little difficulty in tracing the origin of a word not much more than eight centuries old, but it is nevertheless involved in deep obscurity. Several forms are to be met with, especially in low Latin. Among them are:—Scarlata, scarlatum, scarlatus, scarlateus, scarlacteus, scarlaticus, scharlatica, scarlota, scarlotum, escarlotum, escallata, scarlatinus, scarlatina, squarlata-squalata, squalatum. Escarlate, escarlatte, and ecarlate are French. Escarlat and escarlata are Provençal. The Spanish, and Portuguese are escarlate. The Italian is scarlatto, the German is scharlach, and the Gaelic is scarlaid. Some derive the word from galaticus rubor, Galatian red. Galatia was formerly one of the chief sources of the dye. Another derives it from cusculium, quisquilium, scolecion, Greek and Latin names for the Coccus. A third derives it from Ger. schor, fire; and lack, cloth—fire-coloured cloth. Another would take it from Arabic yxquerlnt, of the same meaning as scarlet. Another would derive it from Arabic or Persian, escarlat or serkelat, but as Littré observes these words are modern, and seem to be formed the one from the French or Spanish, and the other from the English. Another says the word is from salacka, and means Syrian red from Sar, Tyre.* Others again derive it from Arabic scharal, meaning kermes dye; another from ker, the first half of kermes, with *s* prefixed, and lack, which may be either German, "cloth," or Arabic, "red," thus meaning either the red worm or worm-dyed cloth. Which of these is the correct origin I do not pretend to decide. In old French écarlate seemed to mean at one time the highest degree of any colour, for we find the expression écarlate verte and écarlate blanche. In the fifteenth century Littré says the word ecarlate appears to have signified woven stuffs of any kind.

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* *Al* is, of course, the Arabic article, and is to be disregarded.

† There is a generally received opinion that carmine is derived from a Latin word—carmen, flesh. There is no such word, and although carmine is called in some places "Lady's blushes," it has no nearer connection with the flesh.

Reiske derives charlatan (originally a mountebank, juggler or tumbler) from escarletum, because they were formerly dressed in scarlet, and were called scarlatati or scarlatani.

It is curious that so many of our names for red colours or dyes should be connected with insects or vermin. This fact alone shows the great importance of the coccus in the earlier ages. We have mentioned coccus, cochineal, vermiculus, vermilion, kermes, crimson, carmine, and scarlet, but madder yet remains, and in one manuscript is found as a synonym of vermiculus. We may notice it at a future time.

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## SOUTH LONDON SCHOOL OF PHARMACY.

THE annual distribution of prizes at the South London School of Pharmacy took place on July 14. The Rev. Mr. Harris, vicar of the parish, was in the chair. After some congratulatory remarks, Mr. Baxter proceeded to distribute the medals and certificates, which were awarded as follows:—

### Senior Chemistry.

| | |
|---|---|
| Certificates | Messrs. Longman and Mortlock (equal). |
| Special certificate for practical chemistry | Mr. Simpson. |

### Junior Chemistry.

| | |
|---|---|
| Medal | Mr. Lister. |
| Certificates | Messrs. Middleton & Roberts (equal). |

### Botany.

| | |
|---|---|
| Medal | Mr. Perry. |
| Certificate | Mr. Singleton. |

### Materia Medica.

| | |
|---|---|
| Medal | Mr. Wilkerson. |
| Certificate | Mr. Perry. |

### Pharmacy.

| | |
|---|---|
| Medal | Mr. Middleton. |
| Certificate | Mr. Balcombe. |

### Extra Certificates of Merit.

| | |
|---|---|
| Mr. Cobb | Pharmacy. |
| Mr. Cliff | Chemistry and Materia Medica. |
| Mr. Lister | Materia Medica. |
| Mr. Morgan Smith | Chemistry. |
| Mr. Oldershaw | Pharmacy. |
| Mr. Shone | Chemistry and Materia Medica. |

Mr. Ince then addressed the students in well chosen words on the subject of success, urging them not to be contented with their present achievements, but ever to press on to something higher. He endeavoured to enforce the idea that success in life came not to successful students alone, but to all steady, patient workers.

Some of the successful students spoke of Dr. Muter's conscientious care, and of the benefit they had received at the school. Dr. Muter moved a vote of thanks to the chairman, who replied appropriately, urging the students to look beyond success in this life, and to maintain at all costs a clear conscience in the sight of God and man.

Mr. Phillips proposed a vote of thanks to Mr. Ince for his presence and support, and after a few words from Dr. Muter the meeting broke up.

The proceedings were most enthusiastic.

# REVIEWS
AND
# Literary Notes.

### *Will's Habitat Map, showing at a glance the Geographical Position of all the Plants used in the Pharmacopœia.* 2s.

THE distinctive feature of this map is a new system of indicating the localities. The map itself is kept very clear of names, only those of the continents, large countries, and towns of pharmaceutical interest being admitted. No names of drugs are found on it. Instead of these lines start from central localities, such as Malta and Mogadore, and travel to the circumference of the hemisphere. Just inside the circumference is a number. Outside are the names of the drugs procured from that locality. Thus, the line starting from Malta is No. 34, and the drugs coming from it, we are told, are fennel, manna and anise. Beneath the map is an alphabetical list of drugs, with a number attached to each. Cassiæ Pulpa is numbered 9 and 44. Referring to these numbers on the map we see that line 9 directs us to the East Indies, line 44 to the West Indies. We only fear that the map will make this branch of study so easy that it will not be remembered. The old proverb, "Lightly come and lightly go," hath some philosophy in it.

### *Poison Chart for Ireland.*

THE Council of the Irish Pharmaceutical Society have just issued a "Chart of the Dangerous Medicines, with their doses, as contained in the British Pharmacopœia." It is printed on card and consists of two parts. First is a list of poisons, with their doses. This includes medicines of various activity with doses ranging from $\frac{1}{60}$ to $\frac{1}{30}$ gr. and from 2 to 6 grs. The second part is Schedule A of the Poisons Act (Ireland). It shows the poisons whose sale must be registered in the Poison Book, and those which must be labelled "Poison," with the name and address of seller. The chart is sold by Messrs. Farmin & Co., Grafton Street, Dublin, at sixpence, and is intended to be hung up in the pharmacy. It would be better to print it on a sheet of paper, to be stuck on a desk or wall, as hanging cards are always a nuisance in a shop.

CORRECTION.—The name of the author of the "Text Book of Structural Botany" is Thomé and not Thorné, as printed last month.

WE HAVE RECEIVED from Mr. Wm. Canning, whose name will be familiar to many of our older subscribers, a neat volume of about 200 pages of Select Practical Notes and Formulæ, relating to pharmacy, materia medica, chemistry, therapeutics, &c., compiled from a great variety of authorities. These formulæ are carefully classified, and must be of considerable service to gentlemen in business. The author has added an attraction to his book by reproducing, as a frontispiece, a facsimile of a prescription dispensed by himself some years back for Dr. Livingstone, in the handwriting of the brave explorer. The price of the book is 3*s.* 6*d.*, and it may be had from the author at 285 Camberwell Road, S.E.

## NEW BOOKS AND NEW EDITIONS

### Published since July 17.

| | |
|---|---|
| Animal Physiology. Complete. 12mo. Stewart & Co. .. .. | 1/ |
| On Curvatures of the Spine: their Causes and Treatment. By R. Barwell. 3rd edition, post 8vo., pp. 240. Macmillan. .. .. | 5/ |
| Orthopraxy: the Mechanical Treatment of Deformities, Debilities, and Deficiencies of the Human Frame. By H. H. Bigg. 3rd edition revised and enlarged. With 319 Illustrations. 8vo., pp. 650. Churchill. .. .. .. .. .. .. .. | 15/ |
| The Place of the Law of Similars in the Practice of Medicines. A Lecture. By J. Gibbs Blake. 8vo., pp. 24. Turner & Co. .. | /6 |

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* Sar originally meant a rock, and becomes Tyre through a form Zor or Tsor. We have the word with the same meaning in the Devonshire Tors, whither it was probably brought by the Phœnicians.

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|---|---|
| Electrometers. By J. T. Bottomley. With Illustrations. (Science Lectures at South Kensington.) 12mo., pp. 34, sewed. Macmillan. | /6 |
| The Myxomycetes of Great Britain, arranged according to the Method of Rostafinski. By M. C. Cooke. Illustrated by 24 Plates. Williams & Norgate. | 8/ |
| The Different Forms of Flowers in Plants of the same Species. By C. Darwin. With Illustrations. Post 8vo., pp. 360. Murray. | 10/6 |
| Epitome of Skin Diseases. By T. & T. C. Fox. 2nd edition. 32mo., pp. 144. Renshaw. | 2/6 |
| A Plan for Rendering Salt Meat more Nutritious, thereby preventing Scurvy. By R. Galloway. 2nd edition, enlarged, 8vo. Pp. 16, sewed. (Dublin: Hodges.) Simpkin... | 1/ |
| Our Medical Charities: an Address at the Birmingham Branch of the British Medical Association, June, 1877. By S. Gamgee, Churchill. | /6 |
| Chemical Handicraft: a Classified and Descriptive Catalogue of Chemical Apparatus suitable for the Performance of Class Experiments. By J. J. Griffin. 2nd edition. 8vo., pp. 476. J. J. Griffin. | 4/ |
| Eight Lectures on the Homœopathic Treatment of Acute and Chronic Bronchitis, &c. By R. D. Hale. 2nd edition. 8vo., pp. 104. Turner. | 2/6 |
| Veterinary Notes for Horse Owners: an Everyday Horse Book. By M. H. Hayes. Illustrated. Post 8vo., pp. 300. Thacker. | 7/6 |
| The Fern World. By H. G. Heath. With Coloured Plates. Post 8vo., pp. 468. Low. | 12/6 |
| Inorganic Chemistry. By J. W. Hicks. 12mo., pp. 92. Stewart & Co... | 1/ |
| Illustrations of Clinical Surgery. By J. Hutchinson. Fasc. VIII., with 15 Plates of Fractures of the Skull. Imp. 4to. Churchill | 6/6 |
| Inorganic Chemistry. By W. B. Kempshead. Enlarged edition. 12mo. Collins. | 1/9 |
| Carlsbad and its Natural Healing Agents, &c. Post 8vo. Trübner. | 5/0 |
| Examination Papers for Use of Medical Students. Questions given at different times by the various Medical Examination Boards of the United Kingdom, now arranged as Examination Papers. By W. J. Lush. 12mo., pp. 116. Churchill. | 2/6 |
| Hints on the Water Supply of Small Towns and Villages. By L. L. Macassey. 8vo. Spons... | 4/6 |
| Sanitas et Omnia Sanitas. By R. Metcalfe. Vol. I. 8vo., pp. 354. Co-operative Printing Company. | 7/6 |
| Diabetes Mellitus: its History, Chemistry, Anatomy, Pathology, and Treatment. By W. Morgan. Illustrated with Woodcuts and cases successfully treated. 12mo., pp. 202. Homœopathic Publishing Company. | 2/6 |
| Signs and Concomitant Derangements of Pregnancy. By W. Morgan. 18mo., pp. 156. Homœopathic Publishing Company. | 2/6 |
| Salt's Medico Electrical Apparatus: a Practical Description of every Form in Modern Use, with Directions for Mounting, Charging, and Working. 8vo. Churchill. | 2/6 |
| Ferns, British and Foreign; with a Treatise on their Cultivation. By J. Smith. New and enlarged edit., post 8vo., pp. 450. Hardwicke | 7/6 |
| Sizing of Cotton Goods, and the Causes and Prevention of Mildew. A Lecture delivered before the Society of Arts, extended into a Treatise. By W. Thomson. 8vo., pp. 170. (Manchester: Palmer.) Simpkin. | 7/6 |
| Manual of Inorganic Chemistry. Vol. 2. The Metals. By T. E. Thorpe. New edition, with copious Index and Examination Questions and Exercises. 12mo., pp. 406. Collins. | 3/0 |
| Warfare of Science. With Preparatory Note by Professor Tyndall. By A. D. White. 2nd edition, post 8vo., pp. 156. Henry S. King & Co. | 3/6 |

## AMERICAN AND FOREIGN RECENT PUBLICATIONS.

| | |
|---|---|
| Histoire des Plantes. T. 6. Monographie des Myrtacées, Hypéricacées, Lythariacées, Onagrariacées, et Balanophoracées. By Baillon. Illustré. Royal 8vo. | 9/0 |
| Elementary Treatise on Practical Chemistry and Qualitative Inorganic Analysis. By F. Clowes. Crown 8vo. (Philadelphia.) London. | 12/6 |
| Handbuch der Chemie. Anorganische Chemie. By Gmelin-Kraut. 6 Aufl. Hrsg. v. K. Kraut. 1. Bd. 1. Abth. Bearb. v. A. Naumann. | 24/6 |
| Lehrbuch der Determinanten-Theorie. By S. Günther. 2 Aufl. 8vo. | 6/0 |
| Cure of Rupture, Reducible and Irreducible, also of Varicocele. By G. Heaton. Edited by J. Henry Davenport, M.D. 16mo. (New York.) London. | 7/6 |
| Conférences Cliniques sur les Maladies du Larynx et des Premières Voies. By Dr. Isambert. Illus. 8vo. | 7/0 |
| Allgemeine u. Specielle Gewerbe-Pathologie u. Gewerbe-Hygiene. By A. Layet. Deutsch v. F. Meinel. 8vo. | 9/6 |
| Fragments of Physiology; or, Essays on Life, Health, Hygiene, Disease, and Cure of Disease. By A. T. Lowe. 16mo. (Boston.) London. | 6/6 |
| Chemist's Manual: a Practical Treatise on Chemistry. By H. A. Mott, jun. 8vo. (New York.) London | 30/0 |
| Legal Chemistry: a Guide to the Detection of Poisons, Examination of Stains, &c., as applied to Chemical Jurisprudence. By A. Naquet. Translated from the French. Illustrated. Crown 8vo. (New York.) London. | 10/6 |
| Handbuch der Allgemeinen u. Physikalischen Chemie. By A. Naumann. 8vo. | 28/0 |
| Thesaurus Literaturæ Botanicæ omnium Gentium. By G. A. Pritzel. 4to. | 52/0 |

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## PARIS ITEMS.

M. Ménier, of chocolate renown, has subscribed 4,000*l.* to the electoral expenses of the Republican Committee.

A rich jeweller, lately deceased, M. Moïna, bequeathed 40,000*l.* for the establishment of a hospital for aged and infirm women.

Doctors, pharmacists, veterinary surgeons, and hospital students are to be exempt this year from the twenty days' duty of the reservists, which commences on August 20.

The artificial colouring of wine has lately been carried on so extensively that the Prefect of Police has organised a detective service to accomplish the suppression of the abuse.

The Daughter of the eminent chemist, Adolph Wurtz, was married on the 8th inst. at the Protestant Church of the l'Oratoire, in presence of a numerous assemblage of scientific and medical men.

Some soldiers were recently engaged in experimenting with chlorate of potash at the military laboratory in Paris, when an explosion took place, which seriously wounded a sub-officer in attendance.

M. Alfred Deshaies, chemical "préparateur," in the Collége du France, has been found dead in his laboratory. It is supposed that he had been experimenting on the effect of some new compound he had discovered.

M. Nidert, pharmacien in Paris, being in the store-room of his shop, was attracted to the front by an unusual noise, and found his money drawer being investigated by an agile plunderer, who was at once handed over to the officers of justice.

Salicylic Acid is being largely advertised in France for preserving wine, beer, and cider during the summer heats, and for preventing milk and *bouillon* from souring; also for aiding the production of jams, jellies, and other *confitures*, with an economy of sugar said to amount to 25 per cent.

Phylloxera Again.—Professor Fatio, of Geneva, has organised an international congress at Lausanne on this interminable question, and representatives from the principal countries in Europe attended. The programme for discussion comprised 131 questions, and the sittings were to continue 10 days. Better have the phylloxera, or the Colorado beetle even, than these everlasting discussions.

The new hospital of the Hotel Dieu, which has been erected at a cost of nearly two millions sterling, is now open, all the patients, some four hundred in number, having been removed from the old buildings, which are to be demolished to enlarge the open space in front of Notre Dame Cathedral.

Bread Impregnated with Lead.—An economical Paris baker recently distinguished himself by a speculation in some old carpenter's work from the demolitions, and after a few days' use in his furnaces a considerable number of his clients sickened, and the physicians declared them to be under the influence of lead poisoning. No deaths resulted, but a great deal of newspaper and public talk occurred in reference to the affair.

A Farmer at Douai, in France, having had for a month an obstruction in his throat which defied all ordinary treatment, began to vomit and spit blood, and was given up. A neighbour having learned that he had drank out of a brook previously to the difficulty, persuaded him to take a strong solution of salt and water, when he at once ejected a leech about five inches long, since which time the patient has been doing well.

Failure of an English Pharmacist in Paris.—Mr. Pratt, proprietor of the Anglo-American Pharmacy, 4 Rue Meyerbeer, Paris, has been declared a bankrupt. This establishment, variously known, for a few years past, as "Pharmacie Meyerbeer," "Paul Bon's Pharmacy," "Pharmacie Anglo-Américaine," &c., has made a leading thing of the long discarded "Condurango," as a specific for cancer, and has advertised the precious stuff extensively, but, as we infer, without good results.

A first-class notice for nursing bottles has just been perpetrated by the much-talked about *littérateur*, Alexandre Dumas *fils*, in a letter which he has written to the directrice of one of the infants' hospitals in Paris. Speaking of the popular aversion to artificial nursing, he says:—"The nursing bottle is entirely too much in discredit. I, myself, was brought up with one, and it happens that on this very day, July 27, I am fifty-three years old, and have never had a serious sickness."

M. Deyrolle has perfected a valuable improvement in connection with photography, doing away entirely with the use of plates of glass for the negatives, which are so easily broken in transit. He covers a thick paper with a special varnish, which forms a surface equal to glass, for the reception of the layer of collodion. Some special manipulation is required in the development of the picture, and in the printing therefrom, all of which difficulties are said to have been successfully surmounted by M. Deyrolle.

Flower Barometer.—The latest novelty in the French capital is a simple artificial flower in fine cotton imitating a rose, daisy, hyacinth, or other flower, the petals of which are impregnated with a chemical solution which has sensitive properties, and changes colour as the weather is fair or otherwise. In fine weather the flower is blue, in changing weather lilac, and in bad weather pink. This interesting novelty is the invention of a leading scientific man in France, who attached no commercial value whatever to it, and communicated the discovery to a speculator for 20*l.*, who afterwards sold it for 120*l.*, and it was again transferred to the parties who are actually making a fortune out of it for the sum of 200*l.* These flowers are mounted up in pretty little vases with a suitable surrounding of artificial leaves, moss, &c., and retail readily at from two to three francs each.

Retail Prices in Paris.—A late incident which found its way into the papers has shown up the diversity of charges which exist among Parisian pharmaciens. A resident of the not by any means fashionable quarter of Batignolles sent a prescription to a neighbouring chemist, consisting of a simple potion and fifteen pills of sulphate of quinine. The remedies were sent, with a bill for seven francs, which the client found exorbitant, and refused to pay, whereon the pharmacien sent him a letter in which he stated that quinine was worth three francs the gramme, and threatened a suit for the amount if not paid. There was no resource but to pay, but the client took care to have the same prescriptions repeated at another shop in a central, and thus more expensive, quarter, where the price charged was only three and a half francs. The French journalist thinks there ought to be some limit to the rapacity of some of the pharmaceutists in Paris.

# PATENTS

[The following list has been compiled expressly for The Chemist and Druggist by G. F. Redfern, Patent Agent, successor to L. de Fontainemoreau & Co., 4 South Street, Finsbury, London; and at Paris and Brussels.]

Provisional Protection for six months has been granted for the following:—

1832. R. J. Wilson, of 37 Tritonville Road, Sandymount, Dublin, Ireland, chemist. A new process for maturing and ageing whisky. Dated May 11, 1877.

2235. J. B. Moore, of Old Kent Road, Surrey, confectioner. A new or improved medicinal or anti-scorbutic compound to be used as a cooling draught. Dated June 8, 1877.

2278. H. Hampson, of Manchester. Improvements in stopping or closing the necks of bottles. Dated June 12, 1877.

2288. J. Holden, S. Turton, and J. Barber, all of Manchester. Improvements in and in the construction of receptacles or chambers for containing acids and chemical fluids. Dated June 12, 1877.

2290. E. Vignier, of Great Tower Street, London, merchant. Improvements in distilling and rectifying grain or malt whiskies, and in the apparatus employed therein. Dated June 12, 1877.

2300. C. Cotton, of 25 Derwent Street, Nottingham, mechanic. Improvements in means or apparatus for the manufacture of elastic fabric to be used in the production of knee-caps and other surgical hosiery and belts. Dated June 13, 1877.

2327. W. Black, of Hedworth, near South Shields, and David Hill, of East Jarrow, South Shields, both of Durham. Improvements in the manufacture of sulphates of soda and potash and in the apparatus employed therein. Dated June 14, 1877.

2338. H. Hampson, of Manchester. Improvements in the construction of stoppers for closing the necks of bottles. Dated June 15, 1877.

2362. R. W. Wallace, of the Chemical Works, New Road, Battersea Park, Surrey, manufacturing chemist, and C. F. Claus, of Great St. Helen's, London, consulting chemist. Improvements in the purification of gas and the utilisation of bye-products by the manufacture of secondary products therefrom. Dated June 16, 1877.

2375. J. Taylor, surgeon, 51 Hope Street, Liverpool. An improved method for the preservation in its natural state of fresh animal food, such as beef, mutton, pork, and fish, and to prevent decay in hides and salted meats. Dated June 19, 1877.

2376. R. J. Smith, of Manchester, engineer. Improvements in means for closing or stopping bottles. Dated June 19, 1877.

2382. J. H. Gray, bread and biscuit manufacturer, and A. Harvey, foreman, both of Glasgow, North Britain. Improvements in the manufacture of biscuits, and in machinery or apparatus connected therewith. Dated June 19, 1877.

2399. T. P. Miller, of the Cambuslang Dyeworks, Lanarkshire, North Britain. Improvements in or connected with the process of dyeing yarn or cloth with alizarine or analogous colouring matters. Dated June 21, 1877.

2476. R. W. Wallace, of the Chemical Works, New Road, Battersea Park, Surrey, manufacturing chemist, and C. F. Claus, of Great St. Helen's, London, consulting chemist. Improvements in the purification of gas and the utilisation of bye-products by the manufacture of secondary products therefrom. Dated June 27, 1877.

2481. W. Jones and J. Walsh, both of Middlesborough, Yorkshire, chemical manufacturers. Improvements in and relating to apparatus for the manufacture of sulphates of soda and potash, parts of which invention are applicable to other chemical apparatus. Dated June 27, 1877.

2545. E. Johnson, of Morden Grove, Lewisham, and J. Robey, of Cumberland Street, Manchester. Improvements in the method of treating sewage sludge. Dated July 3, 1877.

2557. W. Horner and G. Barker, both of the Globe Works, Manchester. Improvements in apparatus for filling bottles with aërated and other liquids. Dated July 4, 1877.

2579. P. Spence and F. M. Spence, both of Manchester, manufacturing chemists. Improvements in the manufacture of alum and certain alumino-ferric compounds. Dated July 4, 1877.

2591. A. Henriques, of 2A Eastbourne Terrace, Paddington, London. Improvements in stoppering bottles, jars, and other vessels. Dated July 5, 1877.

2635. F. B. Doering, of Westminster Chambers, Westminster, London, civil engineer. Improvements in the manufacture of medicated wools or fibres. Dated July 9, 1877.

2649. A. Wachhausen, of Wiesbaden, Germany, doctor of philosophy. An improved brown colour or dye, and process for obtaining the same. Dated July 10, 1877.

2663. Mary Welton, of Grafton Street West, London. Improvements in preserving meat and in the apparatus employed therefor. Dated July 10, 1877.

2687. E. Solvay, of Brussels, Belgium, manufacturer. Improvements in the treatment of bicarbonate of soda obtained in the ammoniacal process, and in means and apparatus for increasing the density of soda and rendering it caustic. Dated July 12, 1877.

2725. J. Hanson, of Savile Town, near Dewsbury, Yorkshire, manufacturing chemist. Improvements in treating sewage and other foul water by the use of liquids only; also an improved method of treating sewage and foul water by the use of solid ingredients combined with liquids; and improvements in softening clarified and hard water. Dated July 16, 1877.

Letters Patent have been issued for the following :—

103. H. Y. D. Scott, of Ealing, Middlesex, Major-General, C.B. Improvements in the treatment of fæcal matters and ammoniacal compounds for the production of manures. Dated January 9, 1877.

152. C. Morfit, of 23 Southampton Buildings, London, consulting chemist. Improvements in the manufacture of fruit bread and farina. Dated January 11, 1877.

357. D. McFarlane, of Glasgow, North Britain. Improvements in purifying or treating alcohol liquids, and in apparatus therefor. Dated January 27, 1877.

388. S. T. Ashton, of 11 Vine Street, Minories, London, wine merchant. Improvements in taps and apparatus for bottling wine and other liquors from casks. Dated January 30, 1877.

528. E. Perrett, of 23 Abingdon Street, Westminster, London, civil engineer. Improvements in filters. Dated February 7, 1877.

824. R. Turnbull, of Glasgow, North Britain. Improvements in collecting and purifying sewage, and in the apparatus or means employed therefor. Dated March 1, 1877.

1213. J. Henderson, of Truro, Cornwall, civil engineer. Improvements in the manufacture of ice and snow into blocks, slabs, and other forms, and in machinery employed therein and for other purposes. Dated March 27, 1877.

1319. J. Sharr, of Bradford, Yorkshire. Improvements in liquid soap and in the manufacture of the same. Dated April 4, 1877.

1958. B. C. Molloy, of the Temple, barrister-at-law, and J. D. Warren, of South Kensington, London, scientist. Improvements in the method of using and producing nitric acid. Dated May 18, 1877.

2212. J. Ganter, of Paris, France. An improved mattress for children and invalids. Dated June 7, 1877.

Specifications published during the month :—

Postage 1*d*. each extra.

1876.

4640. W. Rosenthal. Busks for abdominal stays, &c. 2*d*.
4655. J. S. Butler. Preparation of aniline dyes. 2*d*.
4751. F. T. Bond. Production of sulphurous acid gas. 2*d*.
4758. D. McKechnie. Treating oxides of iron. 2*d*.
4762. F. Windhausen. Producing cold and warm air. 6*d*.
4774. G. Bartlett. Filters. 6*d*.
4782. W. W. Auld. Preparation of food. 4*d*.
4791. A. Graham, M.D. Obtaining fatty matters from sewage, &c. 2*d*.
4839. C. Girard, E. Willm, and G. Bouchardat. Obtaining colouring matters. 4*d*.
4845. Elizabeth Spink. Compound or liniment for lung diseases. 2*d*.
4848. G. Rydill. Treating sewage, &c. 4*d*.
4851. P. C. Bunn. Pigments. 2*d*.
4867. R. Bramwell. Oil cans. 2*d*.
4878. S. W. Shore. Apparatus for drawing corks. 2*d*.
4893. S. B. Shaw. Lint. 2*d*.
4904. J. Storer. Jars for acids, spirits, &c. 4*d*.
4915. J. T. Lyon. Stoppers for bottles. 4*d*.
4920. W. Radcliffe. Refrigerating filter or ice safe. 4*d*.
4952. T. H. Cobley. Manufacture of potash alum. 4*d*.
4979. T. Shaw and W. Blackburn. Apparatus for measuring and drawing off liquids. 2*d*.
4980. W. Laing, jun. Soft soap. 2*d*.
4993. J. E. Bonnett. Indiarubber dress for invalids or infants. 2*d*.
5061. C. & A. Forrest. Drying and powdering blood, &c. 6*d*.

1877.

22. S. Bennett. Labels for pill boxes, &c. 4*d*.
27. W. R. Lake. Apparatus for testing milk. 2*d*.
77. E. Solvay. Manufacture of chlorine. 4*d*.
91. E. Solvay. Manufacture of hydrochloric acid. 2*d*.
171. E. Solvay. Utilising silicates and aluminates of lime and magnesia. 4*d*.
457. W. Moody. Manufacture of hyposulphate of soda, &c. 4*d*.
633. F. M. Lyte. Treating mixed ores and residual products. 4*d*.
952. S. Hallsworth and R. Bailes. Treating and clarifying sewage, &c. 4*d*.

## BANKRUPTS.

Holderness, Henry Lazarus, 82 High Street, Putney, dealer in artificial teeth and dentist. August 3.

Money, Frederick John, 1 Marlborough Place, Brighton, doctor July 24.

## LIQUIDATIONS BY ARRANGEMENT OR COMPOSITION.

*Notices of first meetings of creditors have been issued in re the following estates. The dates are those of the "London Gazette" in which the notices first appeared.*

Bailey, Thomas, Crabbe Cross, Ipsley, Warwickshire, chemist and grocer. July 14.

Fieldin, Samuel, 14 St. Peter's Street, Blackburn, late High Street, Rishton, cattle-spice manufacturer. July 17.

Hartley, Thomas, Constable, near Rawtenstall, soap manufacturer. July 21.

Hewitt, Edwin Minott, and Gardner, John Nicholson, Wick Lane, Old Ford, chemical manufacturers. July 6.

Hinds-Howell, David, Pontardulais, innkeeper and druggist. July 12.

Horner, Andrew Robson, High West Street, Gateshead, chemist. July 31.

Kenyon, John Kilshaw, Billingborough, Lincolnshire, surgeon. July 17.

Norton, Charles Benjamin Spragge, Shipston-on-Stour, late Moreton-in-Marsh, chemist. July 18.

Watson, John Cherry, trading as J. C. Watson & Co., 37 and 38 Mark Lane, and 24 King's Road, Camden Town, drug and produce merchant. August 3.

Wilkinson, Henry Ward, 76 Howard Street, Sheffield, chemist. July 6.

## PARTNERSHIPS DISSOLVED.

Alford & West, Taunton, surgeons.

Bennett & Jones, Chapel-en-le-Frith, medical practitioners.

Ewen & Haines, Long Sutton, surgeons.

Hancock, Barnitt & Co., Chippenham, annatto manufacturers; so far as regards Francis Barnitt.

Harrison & Robottom, Loddiges Road, Hackney, perfumers.

Hooper & Thompson, Stapenhill, surgeons.

Philbrick & Scatliff, Brighton, surgeons.

Sadler & Lancaster, Barnsley, surgeons.

Spurr & Chesters, Manchester, mineral water manufacturers.

Dodsworth, Dodsworth & Lyons, Turnham Green, physicians.

Parkin & Hirst, Liversedge, aërated water manufacturers.

Richards, Jones & Lewis, Monmouth, chemical manufacturers; so far as regards Henry Richards.

Moreton & Wright, Northwick, surgeons.

Quincey & Hitchin, Leicester, soda water manufacturers.

THE CHEMIST AND DRUGGIST

☞ *For particulars of Advertisements, Subscriptions, &c., please refer to the first page of Literary matter. An Index to the Advertisements contained in this issue will be found in the front portion of the Journal.*

*OFFICE—Colonial Buildings, 44a Cannon Street, London.*

RENDALL'S THEOBROMINE,
OR
CONCENTRATED COCOA,

BEING a first-class article, and nicely got up, commands a good sale by all Chemists who bring it under the notice of their customers.

In 1*s.*, 2*s.*, 3*s.* 9*d.*, and 7*s.* 6*d.* tins, through the Wholesale Houses, or direct from the Proprietor,

J. M. RENDALL,
28 QUEEN STREET, EXETER.
*Chief Wholesale Agents—*
SANGER & SONS, 150 OXFORD STREET, W.

"LEA & PERRINS'" SAUCE,
THE "WORCESTERSHIRE."

In consequence of Spurious Imitations of LEA & PERRINS' SAUCE, which are calculated to deceive the Public, LEA & PERRINS have adopted a NEW LABEL, bearing their Signature, thus—

Lea & Perrins

Which will be placed on every bottle of WORCESTERSHIRE SAUCE after this date, and without which none is genuine. Sold Wholesale by the Proprietors, Worcester; Crosse & Blackwell, London; and Export Oilmen generally. Retail, by dealers in Sauces throughout the World. November, 1874.

IMPORTANT TO CHEMISTS,
SODA WATER MANUFACTURERS, AND OTHERS.

Removal of Lead from Water.
THE SILICATED CARBON FILTER

Entirely removes Lead from Water, thus meeting the complaints that arise from time to time as to the presence of Lead in Aërated Waters.

For confirmation of this assertion, see the opinions of such authorities as Dr. BARTLETT, Professor WANKLYN, and others, at page 74, December, 1876.

REDUCTION IN PRICES.

GENERAL MINERAL WATERS DEPÔT,
27 MARGARET STREET, REGENT STREET,
LONDON.

PURE CRUSHED LINSEED.

PETER MUMFORD & SON'S PURE CRUSHED LINSEED.
BEST QUALITY. NO OIL EXTRACTED.
Ground so as to retain the natural colour of the seed without being heated.
22s. per cwt. Special Quotations for Larger Quantities.
REPORTS AND ANALYSES ON APPLICATION, POST FREE.
NEWCASTLE GRANARY AND STEAM MILLS, FARRINGDON ROAD, LONDON.

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E. GOULD & SON,
*Chemists by Appointment to the London Homœopathic Hospital, Manufacturing Homœopathic Chemists,*
Are desirous of appointing Agents for the Sale of their Preparations in various parts of the United Kingdom and the Colonies.
For Particulars apply at 59 Moorgate Street, E.C.

FOR PARTICULARS OF
THE
ANALYSED TEA ASSOCIATION,
*And Opinions of the "Lancet," &c.,*
See Page 43.

# Editorial Notes.

## A NEW SPIRIT IN THE PHARMACEUTICAL COUNCIL.

It is an unusual and unexpected pleasure for us to have to report a new departure in the policy of the Pharmaceutical Council. We have so often had to comment on the apathy which that body has shown whenever any trade interest has been prominent that we are perhaps disposed to give an undue importance to the earliest signs of vigour officially manifested. But from every point of view, and by all parties, the serious nature of the decision arrived at, at the last meeting, to defend a member against the attack of a section of the medical profession, will be recognised. We confess our extreme gratification at this decision. For the past eighteen months we have perseveringly directed attention to the imminent danger which threatened the trade in regard to what is known as counter practice. The judgment of Baron Bramwell in Nottingham's case, and his totally unexpected interpretation of the Apothecaries Act, opened a new vista for both doctors and druggists. That a considerable proportion of the former had resolved to make the most of this judgment was manifest to anyone who watched events with an impartial eye. With such an advantage it would have been easy to crush individual druggists. The Pharmaceutical Council made no sign. The Trade Association was formed, and the Medical Attack Association soon learned that the campaign they had inaugurated was not to be the easy promenade they had imagined. But it is useless to deny that so long as the influence and the resources of the Pharmaceutical Society were withheld our powers of resistance were less than half what they ought to be. The moment was critical, because, if the trade is to exist, the right of a chemist and druggist to recommend and sell his wares *in the capacity of a tradesman* must be maintained. The contest is by far the most important which has ever been forced upon the trade, and we have never been disposed to under-estimate the prestige and the power which the Pharmaceutical Council could add to the defence of our position. Therefore, we say again that the resolution arrived at by that council at its last meeting, to defend the principle, is a most valuable accession of strength. In this matter the trade is deeply indebted to Mr. Hampson, who has been the unwearying and able exponent of its interests.

Another indication of a more liberal policy in the Pharmaceutical Council is the motion brought forward by Mr. Robbins in regard to the Benevolent Fund. Whether the details of his suggested scheme are wise or not is open to debate. But we sincerely trust he will succeed in establishing the principle that money should be no longer collected, ostensibly for charity, but actually only to swell a fund already too great for the demands made upon it.

## BOTANICAL COMPETITION.

As announced last month, we now offer Hanbury's "Pharmacographia" as a prize to be competed for by botanical students. The competition will consist of a plant or plants mounted and displayed so as to exhibit the distinctive characters of the natural order *Scrophulariaceæ*, as exemplified by British plants. Attention will be specially given to the care shown in the selection of a representative species, the skill in dissecting and mounting, and the completeness with which the salient points are displayed. By distinctive characters we mean the characters which distinguish it from all other natural orders. Superfluous specimens will be counted as errors. The specimens are to be mounted and forwarded to this office, 44A Cannon Street, E.C., by September 10. They must be accompanied by a note explaining the points which the competitor intends to illustrate by each part of his specimen, and by a declaration in writing, signed by the competitor, to the effect that the specimens were selected, dried, and mounted without assistance except from books. Garden or wild plants may be used. The specimens will not be returned unless accompanied by sufficient stamps to cover the postage. The award will be published in our September issue.

## A CORONER ON THE PHARMACY ACT.

An inquest was held at Walsall, August 3, on the body of a man named Baldwin, who had committed suicide by swallowing an ounce of laudanum. George Elliott, chemist and druggist, 50 Park Street, Walsall, said that he supplied the deceased with an ounce of laudanum. He did not know the deceased, and did not ask his name. He asked Baldwin if he knew the laudanum was poison, and if it was for some one accustomed to take it. He was told that it was for a woman who took it regularly. The bottle was labelled in large letters "Laudanum, Poison," with name and address of seller. Chemists were not required to ask a customer his name and address. The coroner of the borough, A. A. Fletcher, Esq., then said he thought the law required the name and address of the purchaser to be ascertained. Mr. Elliott produced the Act of 1868, but the coroner asserted that the Act of 1877 differed from that of 1868, and imposed new obligations on chemists. He thought it would be the wiser plan to question strangers, and ascertain the name and address of the purchaser. In fact, chemists could not sell the poison without someone introducing the purchaser in cases where the purchaser is a stranger. Of course our readers are well aware that the chemist was quite right and the coroner quite wrong. The notion of the latter about a Pharmacy Act of 1877 was a delusion altogether. In summing up the coroner also said Mr. George Elliott might have been a little more careful. The abstracts from the Act which he kept as his guide were very brief. He (the coroner) believed the amended Act of Parliament required the vendors of poisons to keep a book in which the names of both the purchaser and vendor should be entered. Mr. Elliott appeared, however, to have done all he thought the Act required. The jury returned a verdict of *felo de se.*

## ANALYSM.

The sensation analyst has kept in his hole lately, and we had hoped that he was quietly fitting himself for the responsible duties which he has in many cases too hurriedly accepted. One of these gentlemen, however, has been taking part recently in a performance which was an obvious burlesque both of justice and science. The analyst who should wade through what he is perhaps pleased to term a "research" after castor oil in the pills named in honour of that worthy purgative, is almost capable of hunting through a Turkey carpet for turkeys. The Bournemouth case, which we report in this number, seems to us a most absurd straining of an Act which might have been a very useful one, but which was certainly never intended to make crimes out of the misnomers which a half-educated public will insist on adopting. "Castor oil pills" is the convenient title of a medicine which is intended to imitate in another form the action of castor oil. It is quite possible that some of the most ignorant purchasers fancy that they are getting castor-oil itself in a concentrated form, but the vast majority of a chemist's customers are aware, without the aid of chemical analysis, that a bucket full of castor oil cannot, by any process of condensation, be shut up in a pill box. The Bournemouth magistrates would have credited their reasoning faculties, if perhaps at the expense of a little technical pomposity, if they had dismissed this charge as too frivolous to occupy the attention of a court of justice. At any rate it is to be hoped that other benches will not follow the example of this one in directly encouraging the analytical official to usurp their own functions by delivering along with his certificate judicial decisions in advance of the trial.

A curious display of what we have ventured to designate "analysm" is reported this month from Plymouth. In the *Western Daily Mercury* of July 23 appears a letter signed by W. Sayer, cowkeeper, James Street, Plymouth, who, after referring to some milk cases which had been recently tried at Devonport, which resulted in the fining of several and the acquittal of one dealer who had particularly cross-examined the analyst, Dr. Wynter Blyth, makes the following statement:—"On Monday last I went to Mr. Superintendent Wreford, Plymouth Police, to ask that a policeman be allowed to go to my field to see a cow milked—himself fill three bottles with milk from said cow, one each for the analysts [Dr. Blyth, of Barnstaple, and Dr. Oxland, of Plymouth] and the other to be retained by the police-constable, and each sealed with the Plymouth constabulary seal. Sergeant Monkley was entrusted with this duty, and he is prepared to swear, in any court of justice, that he performed that duty faithfully." The following certificates were received:—From Dr. A. Wynter Blyth—"I am of opinion that same is a sample of *adulterated milk* (if sold as milk)." Then followed the constituent parts of fat, water, &c. He then further states that "the milk this certificate refers to has been almost entirely deprived of cream; there is no other adulteration." For this analysis one guinea was charged and paid. Dr. Oxland, after stating he had "received a sample of milk in a bottle, sealed with the Plymouth constabulary seal, from Mr Sayer," and stating the constituent parts, says, "This sample *has been skimmed*; the greater portion of the cream has been taken away."

The charge against the analyste is a serious one. Dr. Oxland, as far as we can trace, has the sense to say nothing in reply to it. Dr. Wynter Blyth, however, writes a jaunty, and under the circumstances an insolent, letter, sneering at the evidence against him, and implying that the whole performance is a trick, which he is perfectly well acquainted with, but which it is not worth his while to expose.

Meanwhile, as we learn, the Plymouth Dairymen have formed a defensive association, with the double object of checking these unfair attacks and themselves ensuring the supply of pure milk.

## AN AMENDMENT OF THE SALE OF FOOD AND DRUGS ACT.

The following short bill has been introduced into the House of Commons during the past session. The bill passed its second reading and through committee, and came on for third reading on the 10th inst., when Mr. Meldon asked to have it recommitted in order to modify its solitary clause so as to confine its full application to gin. All other spirits when reduced below 25 degrees under proof were not to be protected. Dr. Cameron and Dr. Lyon Playfair opposed the bill, which was supported by Mr. Herschell. The House took but a languid interest in the fortunes of the bill, and after two unsuccessful attempts a "count out" was achieved, which settles its project for this session.

### A Bill to Amend "The Sale of Food and Drugs Act, 1875."

Whereas doubts have arisen with respect to the interpretation of 38 & 39 Vict. cap. 63, sec. 6 (Sale of Food and Drugs Act, 1875):

Be it therefore enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

1. In determining whether an offence has been committed under sec. 6 of 38 & 39 Vict. cap. 63 by selling to the prejudice of the purchaser, whether wholesale or retail, spirits reduced by the admixture with water, regard shall be had, not only to the extent of such admixture, but also to the price at which the spirits so reduced are sold.

LEGAL & MAGISTERIAL.

### CASTOR OIL PILLS.

At the Christchurch Petty Sessions on July 30, before the Hon. R. Douglas and six other magistrates, the following case was tried:—

Mr. Alexander Duncan, chemist and druggist, of the Commercial Road and Lansdowne Crescent, Bournemouth, was summoned for having on June 23, at the parish of Holdenhurst, unlawfully sold to William White a certain drug which was not of the nature, substance, and quality of the article, to wit, castor oil pills, then and there demanded by the said William White, to the prejudice of the purchaser.

The defendant pleaded not guilty.

Superintendent White deposed:—On June 22 I went to Mr. Duncan's branch shop at Lansdowne, Bournemouth, and asked for a shilling's worth of castor oil pills. I was served with a box containing a number of pills, for which I paid a shilling. I then told the person in the shop, Mr. Duncan's assistant, that I was going to send them to the public analyst to be analysed, and offered to divide them in three parts. The assistant said that it was not necessary. I the same day sent them to Mr. Arthur Angel, the county analyst, Southampton, in a registered letter. On July 1, I received a certificate from the analyst and a box containing a part of the samples.

In cross-examination Mr. White said he had heard since he made the purchase that it was the common practice to call such pills castor oil pills, but he did not know before then that ordinary purgative pills were universally sold as castor oil pills in this part of the country. He was not aware that castor oil pills would be useless.

The certificate, which was put in, stated that in the analyst's opinion the sample of pills contained rhubarb, aloes, peppermint oil, and soap, and that the application of the term castor oil to these pills was a dangerous practice, and might be attended with injurious results by leading the purchaser to understand that the active ingredient of the pills was castor oil.

Mr. Lacey (who represented Mr. Duncan) objected to the latter statement being taken as part of the certificate. All the analyst had to do was to analyse the sample and state the particulars of the analysis. Extraneous matter ought not, he urged, to be brought into the certificate.

The Chairman: Where is that laid down?

Mr. Lacey: Nowhere; but it is clear to everyone that it is no part of the certificate.

The Bench overruled the objection.

Mr. Lacey then proceeded to address the Bench on behalf of the defendant. The very gist of the offence, he observed, was that it should be "to the prejudice of the purchaser," which words were inserted in the bill when it was passing through committee, and it could not be said that the purchaser had been prejudiced in this case. These pills had been known to the public and to the medical and chemical profession for several years as castor oil pills, and it had been universally the custom to call them so. The pills in question were very much more valuable than pills made of castor oil would be; but only one grain of castor oil could be contained in one pill, so that it would take from 200 to 400 pills for one dose (laughter). Therefore it had been the custom for twenty-five or thirty years to sell such pills as those in question as "castor oil pills." The custom, he believed, originated at Bournemouth through people who desired a mild aperient asking for castor oil pills, and being supplied with something very much better. This could not be to the prejudice of the purchaser.

The Chairman said he believed it had been decided in a tea case that the purchaser was entitled to have what he asked for, and that if the vendor could not supply him, he had a right to be told so.

Mr. Lacey quoted from Stone's "Justices' Manual" the opinion of the editor that the words "to the prejudice of the purchaser" were intended to prevent injury to the person or pocket of the purchaser, and not to stop the production and sale of articles of various qualities and prices. The words were very ambiguous, and it might be contended that they would include the case of a mere mistake of selling one thing for another, if the purchaser could not use the thing bought for the purpose or to the extent which might have been possible if he had obtained exactly what he asked for, but Mr. Stone considered that they must be limited to the case of a seller knowing what it was that the purchaser actually demanded, and knowing what was the description he handed over. He (Mr. Lacey) contended that the statute was not aimed at such a case as this. The sale was clearly not "to the prejudice of the purchaser."

The Chairman said it was argued in the gin case that the purchaser was not prejudiced by having 27 per cent. of water mixed with the gin, as the weaker the dilution the less harm it would do him, but the Bench ruled that the purchaser was entitled to have what he asked for.

Mr. Lacey said this case was different. There was no castor oil at all in the pills.

The Chairman: This is the case of a purchaser asking for one thing and getting another.

Mr. Lacey: Which was better than the thing he asked for. He might state that his own opinion was fortified by that of a very eminent counsel, Mr. Charles, who went this circuit.

The Chairman said they had a great respect for Mr. Charles's opinion, but Mr. Lacey knew very well that the value of an opinion depended very much on the case submitted.

Mr. Lacey said he was perfectly willing for the Bench to read his case. He intended to call before them several chemists who held a high position in their profession to prove the custom with reference to castor oil pills. There were many articles sold by chemists which were called by names not properly applicable to them, and if the Bench convicted in this case——

The Chairman: You would have to call a spade a spade.

Mr. Lacey was about to show that chemists sold many articles popularly called by names which were not properly applicable to them, when

The CHAIRMAN humorously suggested that Mr. Lacey should not go into this question, as he did not think chemists would thank him to disclose all the secrets of the trade (laughter).

Mr. LACEY, however, went on to say that there was, for instance, "sweet spirits of nitre," which contained no nitre. There were several other articles known by certain names not strictly applicable to them, and it was clearly not an offence to sell them under such names. Mr. Lacey then called

The defendant, Mr. DUNCAN, who deposed:—Some little time ago I opened a branch establishment in Lansdowne Crescent. My assistant there is Michael Mason, who is registered by examination. The two shops are nearly a mile apart, and I am very seldom at the one in Lansdowne Crescent. The pills in question are a compound of rhubarb, aloes, myrrh, soap, peppermint, and treacle, and are the mildest aperient mentioned in the Pharmacopœia, and safe for the most delicate constitution. I have heard of these pills being sold as castor oil pills, and I believe that people know them as such. I myself have never sold them under that name, but I know that it is the custom to do so. Pills made of castor oil would be dangerous if relied upon for the ordinary action of castor oil, as an ordinary dose would have no effect. A serviceable dose would be two tablespoonfuls or 600 pills (laughter).

The CHAIRMAN: Under what name were you in the habit of selling these particular pills?

Mr. DUNCAN: As compound rhubarb pills. I believe it has been the custom for many years to sell them as castor oil pills.

Mr. LACEY: Do you know of any other misnomers in the drug business?

The CHAIRMAN: You are asking your witness to incriminate his own profession, which is hardly fair (a laugh).

Mr. LACEY: Sweet spirits of nitre, for instance. Is there any nitre in that?

Mr. DUNCAN: No.

The CHAIRMAN: Now, you see, Mr. Lacey, I shall buy no more spirits of nitre (laughter).

Mr. LACEY: Spirits of hartshorn?

Mr. DUNCAN: There is no hartshorn in that.

The CHAIRMAN: If you make these disclosures I shall lose my faith in the entire Pharmacopœia.

Mr. LACEY: Cold cream. Is there any cream in that?

Mr. DUNCAN: None (laughter).

Mr. LACEY: You see, your worships, these names are given first by the people themselves, and then by the chemists, because they fancy there is some resemblance.

The CHAIRMAN: Because they draw (a laugh).

Mr. LACEY: All these names are well understood to be misnomers?

Mr. DUNCAN: Yes.

The CHAIRMAN: Shall I take down that the public well understand that they do not get what they ask for? (A laugh).

The next witness was Mr. GREEN, chemist, of Christchurch, who said he had been in the habit for 25 or 30 years of selling a mild aperient—generally compound rhubarb pills—as castor oil pills, by which name people asked for them. He had done this in four or five counties in which he had lived. The action of compound rhubarb pills was similar to that of castor oil, but not quite so quick.

The CHAIRMAN: Do they not act on a different part.

WITNESS: Yes. They act on the rectum and bladder. They do not affect the same intestine. Two tablespoonfuls of castor oil would act more quickly.

Mr. LACEY: How came these pills to be so named?

WITNESS: I believe it was in consequence of some proprietor of patent medicines, bringing out pills under the name of castor oil pills. Gradually the public came to ask for them in small quantities, and it has been the custom in all parts of England to sell under that name such pills as those supplied in this case.

Mr. LACEY: You have heard the description of the pills in the certificate. Are those more expensive than pills made of castor oil would be?

WITNESS: Decidedly so. It might be possible to get one drop of castor oil into a pill, but such pills would not be of the slightest use unless one took at least 200 or 300 (laughter).

Mr. LACEY: I believe there are similar instances of misnomers in the trade. Vinegar-of-four-thieves, for instance, does not really contain thieves? (Laughter).

WITNESS: It does not.

Mr. LACEY: Epsom salts. Are those made at Epsom?

WITNESS: No; in the North of England.

Mr. LACEY: Violet powder. Are there any violets in that?

WITNESS: Not the least.

Mr. LACEY: I apprehend that no one seriously thinks he is buying these things when he asks for them?

The CHAIRMAN: Possibly not, but it is difficult to limit woman's faith.

Mr. LACEY: And from a pecuniary point of view, these compound rhubarb pills would be very much more expensive than castor oil pills. My client has not acted from any mercenary motive. It is simply the case of the public asking for one thing which has practically no existence and being supplied with the nearest we can give them.

The CHAIRMAN: They think they have what they ask for, and they go away with a contented mind.

Mr. LACEY: Yes, when it is impossible for them to get what they ask for—devil's dung, for instance (much laughter). Or dragon's blood. Is that procured from the dragon?

WITNESS: No (laughter).

Mr. ROBERT CHIPPERFIELD, chemist and druggist, of Southampton, deposed: I am a member of the Pharmaceutical Society, and have practised for some years. I have been in business for thirty years in London and Southampton. I have heard of castor oil pills. A very mild aperient is sold under that name, but I scarcely apprehend that anyone out of a lunatic asylum really supposes that they are made of castor oil. Such pills as those described in this case have been known as castor oil pills for a quarter of a century to my knowledge. The action is that of a very mild aperient, and I can state positively from my own knowledge that those who purchase them know that they are not made from castor oil, but are compounded in order to save the necessity of taking castor oil. We sell butter of antimony, but there is no butter in it. There are many other instances of misleading names given to articles by the public, and I do not know that we are bound, even if we had the time, to educate everyone who comes to our shops and tell him the composition of these articles.

The CHAIRMAN: You had better leave the argument to the solicitor and tell us the fact.

WITNESS: That is the fact.

Mr. LACEY: Which would cost the most, these castor oil pills or compound rhubarb pills?

WITNESS explained that if a person required sufficient pills really made of castor oil for a dose he would have to take 438 (laughter), as only one drop could be got in a pill. There was no harm in these pills. The active ingredient was rhubarb. Spirits of nitre, he might observe, had just been mentioned. It had been known for 200 years by that name, but the proper name was spirits of nitrous ether. In this case no blame could be attached to the vendor, even if the public did not know the composition of the pills.

The CHAIRMAN: How should the public know if you do not tell them?

In delivering the decision of the Bench, the CHAIRMAN said the evidence which had been given for the defence did not touch the fact that Mr. White had asked for one thing and been served with another, but the evidence adduced had shown the existence of a custom in the trade which they admitted as evidence in mitigation. It was a singular custom, however, and the sooner it was left off the better. It would be much better when the public asked for castor oil pills to tell them, "There are no such pills in the trade, but we can give you something which will answer the purpose as well." At all events the intention of the Act was perfectly clear—to give the public a right to have what they ask for or be told that they could not get it. The penalty they should inflict was a very light one, because they thought it quite probable that the chemist in this case acted in good faith and was not aware of the law as it existed. They fined the defendant 1*s*. and 19*s*. 6*d*. costs.

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### A CHEMIST'S BOW WINDOW.

MR. J. T. WALKLATE, chemist, Mount Pleasant, Longton, wished to have a bow window put in his shop. He therefore applied to Messrs. Wetton & Meadon, builders, for an estimate of the cost. As Mr. Walklate had a window in stock, Mr. Wetton said it would cost about 5*l*. or 6*l*. to put it in. After doing the work (not over well) and a few other small jobs, the builders sent in a bill for 19*l*. 11*s*. 7*d*. The chemist pleaded a contract, and paid 5*l*. into Court, but the jury allowed the builders 15*l*. It is said that the window will have to come out again.

### A MINERAL WATER MAKER AT HOME.

Two soda water bottles, a poker, a fishing rod, and two champagne bottles hailed down the other day on an unfortunate mineral water maker, who was only correcting his wife. It seems that this Mr. Batey, of Kingsland Road and Stoke Newington, married Mrs. Batey clandestinely some five years ago. Warm tempers and stimulants produced frequent storms, which resulted in such downfalls as mentioned above. The husband seems to have had great faith in his own educational powers, for he was not particularly anxious to get rid of the responsibility he assumed when he married his wife. Mrs. Batey, however, had a mind of her own, and wished to escape her husband's corrections. At least, she petitioned for a divorce on the ground of her husband's cruelty and adultery. In cross-examination her husband's counsel so far overcame her modesty that he persuaded her to tell of her own prowess. The result of the proceedings will be a judicial separation.

### A DOCTOR'S CHEQUE.

Dr. Urban Rock, of 8 Lavington Street, Sutherland Gardens, Bayswater, was charged on the 21st ult. with obtaining money by means of fictitious cheques. The Doctor said that he received a cheque of 45*l.* as professional remuneration from a gentleman whose address he did not know. His friend, Mr. Henry Wragg, a baker, of Prospect Place, Victoria Park, kindly cashed the cheque for him, and it was handed in at the bank, but it was marked "no account." The Doctor offered to pay the money into the Court, as it was no fault of his, but it happened that another cheque had passed through his hands—this one for 65*l.* 10*s.*, drawn on the same bank, and in like manner returned marked "no account." Moreover, it was proved that the cheques were consecutive numbers, and came from a book issued to a firm in 1876. So that, in spite of the Ribbon of the Legion of Honour, which the defendant wore in his button-hole, he was remanded, and locked up for want of a friend to stand his bail.

### SIX MONTHS' HARD LABOUR FOR USING CHLORIDE OF LIME.

The two defendants rejoicing in the names of Aaron Aston and John Harnett Harris seem to be uncertain as to how this useful powder should be used, for they went to a certain Black Brook—which Justice Lopes compared to Lord Wrottesley's drawing-room—near Tettenhall, in Staffordshire, and sprinkled the chloride of lime upon the water.

Everyone knows the theory of disinfection propounded by the renowned medical student; how that disinfectant produced a most violent longing for fresh air, and made the disinfected throw open windows and doors. This seems to have been the case with the trout, for they came to the surface of the water and let the prisoners lift them out without a struggle. The gamekeeper must surely have been prejudiced when he said that the fish were dead and dying! But the prisoners were carrying 24, and 79 more were found on the surface of the water. So the judge sentenced them each (the men, not the trout) to six months' hard labour.

### A NUISANCE FROM CHEMICAL MANUFACTURES.

On August 7, before Mr. Justice Grove, the trial of a nuisance at Battersea was concluded. The nuisance was caused by the manufacture of sulphate of ammonia, and was said to be injurious to the health of the neighbourhood. The Messrs. Wallace were the defendants, and the Wandsworth Board of Health was the plaintiff. Before the case commenced there were said to be more than three hundred witnesses, but this number was finally reduced to 50. The trial occupied five days.

The process of manufacture consisted in the admixture of sulphuric acid and gas liquor. It was admitted on both sides that quantities of gases were given off during the process. The prosecution alleged that these gases were not only offensive but poisonous. The defendants said that the fumes were not very unpleasant, and were quite harmless. The evidence called supported both sides of the question, and was so contradictory that after five hours' deliberation the jury declared themselves unable to find a verdict. They were finally discharged, leaving the dispute still unsettled.

### A ONE-TIME MEDICAL STUDENT IN TROUBLE.

A Mr. Faircloth, once a rather distinguished medical student, was sentenced on July 17 to five years' penal servitude for fraud. He had early given up the medical profession, and was for twenty years a Custom House official. He then retired on a pension of 110*l.* per annum. Six months ago he became postmaster at Witbernsea, near Hull. Wanting money for betting purposes, he issued Post Office orders to fictitious persons, sent advices to the offices named on them, and following the advices to London, he signed the orders in the fictitious names and took the money. The amount was nearly 40*l.*, and he had fully made up his mind to abscond, but stopped for the races. He was taken on the Grand Stand at Epsom, and remarked that it was very funny. He forfeits his pension on conviction.

### THE PERSONATIONS AT THE PRELIMINARY EXAMINATION.

At the Central Criminal Court, on August 7, before the Recorder, the cases of the Queen (on the prosecution of the Pharmaceutical Society of Great Britain) *v.* Frank Oates and Andrew Ritchie Hunter, and the Queen (on the like prosecution) *v.* George Frederick Webb and Andrew Ritchie Hunter, were heard.

The cases have been previously reported in our columns, and on the cases being called all the accused pleaded guilty.

The attention of the judge was called to the fact that Hunter had on a former occasion been found guilty of a similar offence.

The Recorder sentenced Hunter to six months' imprisonment, and in regard to the two other defendants, directed that they should enter into their own recognisances to appear and receive judgment if hereafter called on.

### PROSECUTION UNDER THE APOTHECARIES ACT.

An action brought by the Master, Wardens and Society of the Art and Mystery of Apothecaries against Mr. T. J. T. Corfield, of St. Days, to recover a penalty of 20*l.* for practising as an apothecary, was heard on July 17, at the Redruth County Court, before Mr. M. Bere, Q.C., judge.

On a formal plea the case was adjourned, but, on the representation of the defendant's counsel, it was postponed until the result of the appeal in the case of Mr. Shepperley, of Nottingham, should be known. It now stands adjourned until the November court.

## LONDON BANKRUPTCY COURT.

McCulloch & Perrin, Chemical Merchants, 9 Mincing Lane.

This failure occurred in May, 1876, the bankrupts trading in co-partnership under the firm of McCulloch & Co., and the proceedings were reported in The Chemist and Druggist. The case came before Chief Judge Bacon on July 23, on the hearing of an application by the trustee of the estate for the committal of an accountant, named Harris, who had acted as receiver in the case, upon the ground of his non-compliance with an order made by Mr. Registrar Hazlitt requiring him to account for the sum of 183*l.* 3*s.* 3*d.* Mr. Bagley, who appeared for the trustee in support of the application, said that the receiver had filed a long affidavit, in which he stated that out of the 183*l.* 3*s.* 3*d.* he had paid away 65*l.*, and that as to the residue it was due to him in respect of his charges as accountant and receiver. He submitted that it was incumbent upon Mr. Harris to comply with the Registrar's order, and that no satisfactory reason for his default had been assigned. Mr. Chidley, on behalf of Mr. Harris, said that the order had been made by the Registrar under a misconception of the facts. The debtors had, in the first instance, filed a petition for liquidation, and composition resolutions were registered. Bankruptcy supervened, but the receiver had previously accounted to the debtors, and his obligations having come to an end he could not be properly required to render another account at the instance of the trustee appointed under a subsequent bankruptcy. A miscarriage having, therefore, occurred, he submitted that an opportunity should be afforded to the receiver of rescinding the order of the Registrar. In reply, Mr. Bagley stated that the facts now urged had been brought before the Registrar in February last, when he made the order, and that the case could not now be reopened. If the receiver were aggrieved by the order he ought to have appealed against it. The Chief Judge thought that upon the materials before him he would not be justified in making an order for the receiver's committal. He should direct an inquiry before the Registrar, as, assuming the accuracy of the statement made on the part of the receiver, his liability to the jurisdiction of the Court had come to an end. The motion must stand over pending the inquiry.

J. C. WATSON, Drug Merchant, Mark Lane and Camden Town.

THE debtor, John Cherry Watson, had petitioned for the liquidation of his affairs, and at the meeting of his creditors accounts were submitted disclosing debts and liabilities to the amount of 3,905*l.* 11*s.* 2*d.*; debts fully secured, 1,600*l.*; and debts partly secured, 1,378*l.* 18*s.* 6*d.*; against assets, 430*l.* 5*s.* 5*d.*, consisting of stock, book debts, cash, and furniture. At the meeting it was resolved that a composition of 2*s.* in the pound should be accepted in satisfaction of the debts, payable in two equal instalments on October 24 and January 24 next; but it appeared that through some informality in the proceedings the resolutions had not been registered, and an application was recently made to the Court for leave to hold a new meeting of creditors. Mr. Registrar Pepys said that notice of the application must be given to dissenting creditors, and the matter accordingly stood over. The following is a list of the principal unsecured creditors :—

| | £ | *s.* | *d.* |
|---|---|---|---|
| A. Moryoseph, 3 Heneage Lane .. .. .. .. | 1,400 | 0 | 0 |
| G. White, Hall Street, Dudley .. .. .. .. | 352 | 10 | 7 |
| F. W. Enghalure, Mark Lane .. .. .. .. | 271 | 2 | 4 |
| Whiteley & Co., Leeds .. .. .. .. .. | 130 | 0 | 0 |
| Dickinson Brothers, Fenchurch Street Buildings .. | 70 | 0 | 0 |
| W. Jaques, 2 Fenchurch Street Buildings .. .. | 59 | 19 | 8 |
| Noon & Clark, 16 Bloomfield Street, E.C. .. .. | 65 | 10 | 4 |
| W. Robinson, Madelaine Street, Liverpool .. .. | 35 | 0 | 0 |
| W. Hill, Longcroft, Willesden .. .. .. .. | 22 | 5 | 0 |
| H. Cutler, 59 Borough High Street .. .. .. | 22 | 2 | 6 |
| Major & Field, Upper Thames Street .. .. .. | 20 | 17 | 9 |
| J. Draper, 5 Little Tower Street .. .. .. .. | 20 | 0 | 0 |
| W. Robinson, Harker Marsh, Maryport .. .. .. | 20 | 0 | 0 |
| Atkinson & Co., 66 Aldersgate Street .. .. .. | 14 | 3 | 2 |
| H. White, Cannon Wharf, Smithfield .. .. .. | 12 | 0 | 9 |
| The Metropolitan Bank .. .. .. .. .. | 10 | 0 | 0 |
| Richard Miller & Co., London Fields .. .. .. | 10 | 0 | 0 |

W. J. COOPER, Analytical Chemist, 117 Charlotte Street, Fitzroy Square.

THE adjudication in this case was made by Mr. Registrar Hazlitt on February 27 upon the petition of Mr. B. H. Paul, of 106 Fenchurch Street, consulting chemist and commercial analyst; and the bankrupt subsequently appealed, but the order of the Registrar was affirmed by the Lords Justices. The meeting for public examination was held on the 3rd inst., before Mr. Registrar Pepys, and the following accounts were rendered by the bankrupt :—Creditors unsecured, 4,759*l.* 5*s.*; ditto partly secured, 1,500*l.* (the security being valued at 500*l.*), making a total unsecured liability of 5,759*l.* 5*s.*, against assets of the estimated value of 25*l.* The creditors include :—

| | £ | *s.* | *d.* |
|---|---|---|---|
| H. D. Grindley, Upper North Street, Poplar .. .. | 2,500 | 0 | 0 |
| J. G. Shearman, 10 Gresham Street .. .. .. | 500 | 0 | 0 |
| J. Gamgee, Great Winchester Street Buildings .. | 500 | 0 | 0 |
| W. J. Irons, Muswell Hill .. .. .. .. .. | 267 | 0 | 0 |
| C. K. Cordner, Castle Street, Lisburn .. .. .. | 230 | 0 | 0 |
| Hooper & Co., Victoria Street, Westminster .. .. | 134 | 19 | 8 |
| C. Wilson, Royal Mews, Brighton .. .. .. | 100 | 19 | 0 |
| R. B. Barrett, 2 John Street, Bedford Row .. .. | 100 | 0 | 0 |
| Keary & Co., Chippenham .. .. .. .. .. | 83 | 16 | 4 |
| James & Son, Cheltenham .. .. .. .. .. | 83 | 0 | 0 |
| F. Cox & Son, Vauxhall Bridge Road .. .. .. | 70 | 0 | 0 |
| W. Topley, School of Mines, Jermyn Street .. .. | 60 | 0 | 0 |
| — Miller, Cambridge Place, Paddington .. .. | 57 | 0 | 0 |
| B. H. Paul, Fenchurch Street .. .. .. .. | 47 | 10 | 0 |
| Thomson, Son & Brooks, Rood Lane .. .. .. | 25 | 0 | 0 |

The trustee offered no opposition, and upon the application of Mr. Doria, the bankrupt was allowed to pass his examination.

HEWITT & GARDNER, Chemical Manufacturers, Old Ford.

THIS case came before the Court on July 26. The debtors, Edwin Minott Hewitt and Nicholson John Gardner, had filed a petition for liquidation, returning their debts at about 640*l.*; and an application was made for the appointment of a receiver. It was stated that out of the 640*l.* the sum of 420*l.* was due to relatives; and Gardner had executed a bill of sale as security for a past debt. Mr. Registrar Pepys, being informed that the meeting of creditors would shortly take place, thought it was undesirable to incur the expense consequent upon the appointment of a receiver, and declined to make any order. The following are in the list of creditors :—

| | £ | *s.* | *d.* |
|---|---|---|---|
| W. & G. Gardner, High Street, Whitechapel .. .. | 250 | 0 | 0 |
| — Iles, Marshgate Lane, Stratford .. .. .. | 170 | 0 | 0 |
| Phillips & Cox, Philpott Lane .. .. .. .. | 52 | 3 | 9 |
| Mrs. Cuthbertson, Dalston Rise .. .. .. .. | 50 | 0 | 0 |
| Listen & Biggs, Lawrence Pountney Lane .. .. | 35 | 0 | 0 |
| D. Bumsted & Co., King William Street .. .. | 15 | 0 | 0 |
| R. C. Wynn, Roman Road, Old Ford .. .. .. | 13 | 0 | 0 |
| J. Sargeant & Sons, Old Ford .. .. .. .. | 9 | 0 | 0 |
| Cartwright Brothers, Maiden Lane .. .. .. | 8 | 4 | 8 |
| Moy & Co., North London Railway Depôt .. .. | 7 | 19 | 0 |
| E. Catchpole, Plough Bridge, Rotherhithe .. .. | 7 | 10 | 0 |

## Correspondence

### THE PRODUCTION OF PEROXIDE OF HYDROGEN FROM OILS.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—In the February number of your journal you kindly inserted a letter from me in which I claimed priority over Mr. Kingzett in the discovery that certain hydrocarbons, such as oil of eucalyptus and other essential oils, gasoline, benzine, and kerosene, and all fats and expressed oils, possess the property, when exposed to the combined influence of air and light, of generating peroxide of hydrogen. Your issue for the following month contains a reply from Mr. Kingzett, in which he entirely ignores the evidence I brought forward in favour of my claim to priority, and simply contents himself with a few rather disparaging allusions to my "so-called discoveries," and, in contradistinction to his own "scientific methods" of investigation, he is pleased to call my work that of "a mere observer." He says, "Dr. Day's method of procedure appears to have been limited to coating surfaces with oils and fats, and showing that on application of what is called the guaiacum test with blood, the presence of peroxide of hydrogen, or, as he originally called it, 'antozone' is demonstrated." That my "method of procedure" has not "been limited to coating surfaces with oils and fats," as assumed by Mr. Kingzett, may be readily gathered from the following extracts from a lecture "On the Disinfecting Properties of Certain Substances in Everyday Use," delivered by me before the School of Science, Geelong, June 14, 1875, and published in *Public Health* for October 2 and 9, 1875, copies of which I have already given myself the pleasure of sending to you :—

"Schönbein, the discoverer of ozone, considered that antozone exists in the form of peroxide of hydrogen, but as it has not yet, like ozone, been isolated, I shall speak of it throughout this lecture as peroxide of hydrogen. This substance was discovered by Thénard in 1818, who named it oxygenated water. It is now commonly known as peroxide of hydrogen, although its more modern name is hydrogen dioxide. It is remarkable for the facility with which it gives up half its oxygen, and this property constitutes it a powerful deodoriser and disinfectant. Its great value, however, for this purpose is only just beginning to be understood. Indeed, so little have its nature and properties been studied that Professor Roscoe, in his well-known 'Lessons in Elementary Chemistry,' published in 1871, states that hydrogen dioxide is a substance which does not occur in nature. Now, I claim to have discovered its presence, spontaneously generated, in a vast number of substances which are in almost everyday use, such as all fats and fatty or expressed oils, nearly all perfumes, most, if not all, essential oils, kerosene, gasoline, and benzine, and certain kinds of wood. . . .

"We now come to Eau de Cologne, of which there are two specimens on the table, and I will show you that they are both pretty highly charged with peroxide of hydrogen, and, consequently, are possessed of purifying and disinfecting properties. In this respect they merely represent perfumes in general, including those given off from flowers. We will at the same time examine the palm and cocoanut oils, and shall find that they also contain peroxide of hydrogen. Now, it is a remarkable fact that men and women in every part of the world, from the highest type to the lowest, appear to possess an instinctive desire for the use, in some form or other, of those substances which generate this purifying principle. Europeans, for instance, commonly use them in the form of perfumes, whilst our African brethren prefer their use in the form of palm or cocoanut oil.

"We must not pass over the eucalyptus oil without a few remarks. Here is a specimen obtained from the far-famed *Eucalyptus globulus*. It is the only one I have brought with me, but I have ascertained that the oils obtained from any of the eucalypti will give the same reactions.

"Now, I will pour a single drop of this oil on a piece of paper, and ask you to observe its highly volatile character. In an instant it will be diffused through every part of the room, imparting increased activity to the oxygen in the air, and rendering it more capable of purifying and disinfecting it.

"When we consider that large forests of eucalypti abound in Australia, and that they are incessantly giving off from their evergreen leaves volatile essential oils, which possess, in a very remarkable degree, the property of diffusing themselves through the atmosphere, and transforming a portion of its oxygen into peroxide of hydrogen—a purifying and disinfecting agent of recognised power—we may cease to wonder that our climate should have become so proverbial for its salubrity."

Now, I hold, without fear of contradiction, that many of the views which were offered by Mr. Kingzett, as original, in his paper "On Some Processes of Nature's Hygiene" (leading to improvements in the production of antiseptics, disinfectants, and albumen of commerce), read before the Society of Arts, on February 8, 1877, are precisely similar to those which may be found in the above extracts from my paper read before the School of Science, Geelong, on June 14, 1875.

I may state that, so long ago as October, 1869, I read a paper before the Medical Society of Victoria, in which I clearly demonstrated that a very large number of hydrocarbons possess the property of spontaneously generating peroxide of hydrogen. This paper may be found in the *Australian Medical Journal* for November, 1869.

In a pamphlet by Professor A. S. Taylor, "On the Detection of Blood by Guaiacum," published in the early part of 1874, he says:—"In the Reports for 1867, p. 453, it is stated that 'tincture of guaiacum appears to lose its properties when long kept, probably as a result of exposure to light and air at the same time.' Dr. J. Day, of Geelong, Australia, has lately communicated to me (January, 1874) the results of some experiments on this subject, and on the production and presence of antozone in a variety of substances in which it would not be suspected to exist. . . .

"A great number of liquids have the property of absorbing, from the air or producing antozone or peroxide of hydrogen. Thus, it has been found by Dr. Day and myself, in some samples which he has sent to me, in alcoholic solutions of essential oils, in Eau de Cologne, and in numerous hydrocarbons, such as kerosene, benzole, and other similar products."

Mr. Kingzett rather taunts me with having, in my early papers, entertained confused ideas regarding the nature of the substance produced by the oxidation of essential oils and other hydrocarbons—sometimes calling it antozone and at other times peroxide of hydrogen. Now, it is so well known that the so-called antozone is only a hypothetical substance—the supposed form in which a portion of the oxygen exists in peroxide of hydrogen, that I am rather surprised at his charging me with ignorance on such a subject.

I conclusion, whilst I gladly recognise the value of Mr. Kingzett's discovery, that when water is added to oil of turpentine it is capable of taking up and holding in solution the peroxide of hydrogen which has been formed, I beg to dissent from the view he entertains regarding the necessity for adding water to the oil of turpentine before peroxide of hydrogen can be produced. Many years ago I experimented on this point and found that the addition of water did not make the slightest difference. Oil of turpentine is slightly soluble in water, and this might enable us to explain why water which has been mixed with oil of turpentine acquires and retains the property of giving the reactions of peroxide of hydrogen.

I have the honour to be, sir,
Your obedient servant,
JOHN DAY, M.D.

Geelong, Australia:
June 12, 1877.

## A SHORT WAY WITH CO-OPERATIVE DIFFICULTIES.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—May I ask for space in your paper for the purpose of giving circulation amongst your readers to a paper originally written, and announced to be read, at an adjourned meeting of chemists and druggists of this town on July 27 last, but which, for some reason, the majority of those then present voted should not be read:—

I think the time has arrived when some action ought to be taken by the chemists of this town with respect to the prices charged to the public for our goods, and the manner in which our business is conducted by some firms, which, I think I may venture to say, in many instances is agitating our minds and reducing our sources of income. I do my business at the present time very much after the style of a Cheap Jack or Dutch Auction Mart (much to my chagrin and annoyance), as when the customers arrive at my shop I ask what price Scott's, Parr's or Holloway's pills they require, and I suit them according to their bidding, the same article being frequently sold for 13½*d.*, 1*s.*, 10½*d.*, or 8½*d.*, as the case may be. The same system applies to many drugs and chemicals. Surely some better system can be devised than this—more satisfactory to ourselves and the public also.

[Our limited space this month prevents the publication of our correspondent's letter in full. The greater part of it is an essay on the well-understood dogma that a chemist has a right to larger profits than a baker or grocer. After enlarging considerably on this point, the writer proceeds:]

But I am prepared to recommend a remedy for this Cheap Jack, Dutch Auction style of doing business, which I should like to see adopted and carried out. I feel certain it will succeed if it obtains a fair trial, and the little trouble and outlay hardly requires consideration. It will inaugurate a system of trading whereby we may compete with the unfair and unscrupulous dealer, teach him to stay his sweeping, remorseless system of doing business, equalise our trade, and place us as fellow tradesmen on a just and equitable system of doing business. I will as briefly as possible state my propositions, which are these:—Let the chemists of some large town—say, Brighton—combine together, and instead of our purchasing, as at the present time, Allen's Hair Restorer, Parr's, or any other pills, &c., in ½-dozen, 1-dozen, or 6-dozen quantities, as the case may be, instead of our buying Epsom salts, carbonate of soda, tartaric acid, cream of tartar, oils, perfumes, and the like in 5, 6, or 7 lb. lots, according to our individual requirements, let there be one wholesale store and one buyer for the whole body of chemists in this town: instruct him to send daily, weekly, or oftener to our united society, and take his order, say, for ½ dozen, 1 dozen, or 6 dozen of any patent medicine or proprietary medicine, for 1 or 7 lbs. of any drug or chemical that we may agree to buy in quantity; so that each would order according to his individual requirements. We could then purchase all articles from the makers, proprietors or best-known source, in quantities according to our collective demands, paying cash monthly, buying at the lowest cash price—in fact, turn wholesale men ourselves and then distribute the goods according to the demands of each chemist. We should then be able to effectively compete with any co-operative store or cutting dealer in our business; we could have a combined list of prices, fix the minimum price at which most of our articles should be sold, and the strict rule should be on no account to sell lower than the fixed price; but any member might sell at his own price or prices if in advance of the said fixed price, so that each party might be free to charge his price according to the class of customers he may do business with, or in accordance with his own ideas. We should equalise the trade of the town, or, as I may express myself, each member would do his own business according to his position, his ideas, or to suit the class of customers whom he serves. It is true the small buyer would be placed on an equal footing with the larger one with regard to the price he buys at, but some little arrangement in detail could be carried out with regard to that, so that every registered fellow member of our profession would be free to join us, be he in a large or small way of business, and we could command the trade for twenty miles around us. The system would be a real co-operative one, giving the public the full benefit of our combined efforts to serve them, both with regard to intelligence, attention, and charges, and we must, I contend, succeed against any and every opposition. I feel sure we shall never all be able again to return to our old list of prices: we must come down. Let us, therefore, submit to the advanced ideas of the present age in the manner I suggest by adopting the co-operative system amongst ourselves: we should save also in carriage (a very important item in cost). Let us fight the altered state of things as intelligent men and Englishmen should, never forgetting the good old English feeling of "live and let live." We do not wish to shut up these Cheap Jack shops or co-operative stores if carried on by registered chemists in accordance with the law, but we would like to see them come to our system of doing business, and I think you will find, if you adopt my recommendations in the way I propose, that, although there may be some to oppose us, we should soon show them it would be much to their interest to join us, as I feel satisfied no tradesman would be so blind to his own interest as to pay through any other source 10, 15, or 20 per cent. more for goods than we could supply him at, at so little cost and trouble to himself. The plan might be worked at a very little cost. Say we raise a fund of 10*l.* or 20*l.* each amongst fifty or sixty members as deposit to start upon; stores and warehouseroom may be purchased at a trifling cost, respectable men may be obtained in abundance to do the mechanical work, which I think would cost very little more than the amount we should save in carriage by having our goods down in large quantities at the tonnage rate. Let a committee of management be formed and monthly meetings held, when the accounts might be audited, payments made, and cheques drawn to pay the different wholesale houses, &c. Of course those that did not join us at the first would have to pay an increased premium for future entry, and chemists in smaller towns and villages within a radius of twenty or thirty miles would be only too glad if we could practically show them the benefit in pocket it would be to them to purchase from us and join us, and would only be too glad of the opportunity to do so.

10 Queen's Road, Brighton: Your obedient servant,
August 7, 1877. **Isaac Garrett.**

## THE DOSE QUESTION.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Sir,—We are glad to learn from your notice of Messrs. W. Proctor & Sons' new medicine measure, that attention is being directed in a practical way to "the dose question," which, for many years, has been in a most unsatisfactory condition. Our experience shows that a medical man, when he orders a tea, dessert, or tablespoonful of a mixture to be taken, means, in nine cases out of ten, one, two, or four fluid drachms, respectively, while in 99 cases out of a hundred patients who use the ordinary household spoons—which most of them do—take from 20 to 80 per cent. more than these quantities. To some prescribers this fact is known, and the uncertainty as to what quantities of their prescriptions will be taken—for they do not know whether the patient will use a glass measure which gives 4 drachms to the tablespoon or a domestic spoon which varies from 5 to 8 drachms—causes them, no doubt, to order much smaller quantities than they would if assured that just the amount intended would be taken.

Such a state of things as this surely ought to be remedied. It is discreditable to both prescriber and dispenser, and if not dangerous to the patient it is at least very unfair.

The cure is simple—let doctors order fluid ounces and fluid drachms, or let the compilers of the Pharmacopœia define what constitutes medical spoonfuls, and the responsibility of providing the patient with the means of correctly measuring his medicine will rest with the dispenser, who can readily manage the business with a cheap measure or a marked bottle.

For some years it has been our custom to give to persons not already supplied with a measure a small bottle with the exact dose indicated by means of a label, on which was printed, "To the top of this label is one dose of No. ——." But in July last we ordered to be made, at home, twenty gross of plain glass measures of conical shape, each holding rather more than an ounce. We mark every measure with a file, so that it indicates accurately 1 drachm, 2 drachms, 4 drachms, and 1 ounce, and by means of a printed label, which we paste on and varnish, we explain the meaning of the marks. We give one of these to every patient who is not already supplied. And since all the doses commonly prescribed are indicated upon our measures, the gift has not often to be repeated; but we have still the difficulty of not knowing with certainty what the prescriber means by a spoonful. To obviate this, it is our intention to send a circular to every medical man in the colony, acquainting him with the values we adopt for our spoonfuls, and requesting him to inform us if he attaches any other values; and we shall at the same time take the opportunity of urging the advisability of ordering doses in fluid ounces and drachms. In conclusion, we would ask you to bring this matter before the members of our trade and the profession, and to urge upon the Pharmaceutical Society its duty of conferring with the various medical bodies in order to secure a settlement of the much neglected, but most important, dose question.

Yours, &c.,
Geelong: June 11, 1877. **Bull & Owen.**

## A NICE DISTINCTION.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Dear Sir,—Last month you very kindly gave a notice of our improved capsule stopper, and in doing so say "Messrs. Barnett, Son & Foster, who hold the patent for Codd's patent globe-stoppered bottle for aërated waters, inform us that they have now licensed nearly 400 soda water makers to use the bottle." We now beg to ask you to correct an error that has somehow occurred. We do not hold the above patent, but are "sole agents" for the sale of it. There are now over 400 soda water makers paying an annual royalty of 12*l.* 12*s.* Nearly the whole of these have been obtained through our agency, and from the majority of these we hold testimonials speaking of the high opinion they have of Codd's patent.

The patent capsule stopper is intended by us for securing ale and stout (malt liquor) bottles only, and the opinion of those who have it in use, and those who propose doing so, augurs for it a great success.

Trusting you will kindly insert this, we remain yours faithfully,

**Barnett & Foster.**

## KILLING DOGS.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Sir,—There is a subject which, I think, has not received much attention from our hands, and yet is somewhat interesting. I refer to what may be called "Canine Toxicology." It occurs at times that we are requested to superintend the annihilation of some venerable member of our dumb social dependents, and if that is not speedily accomplished it is apt to cast a reflection on our skill or judgment. Now it seems to me a little definite information would be acceptable to most of us. Perhaps some pharmacist can throw a little light on a practical subject.

The popular notion that a few drops of prussic acid "and all is over" cannot be upheld. It occurs to me that it is of essential importance that the stomach should be empty, especially in the case of powerful dogs; next, that the dose should be so calculated that vomiting will not be induced. Some time ago I gave 40 drops Scheele's acid to a large retriever; no effect; then I gave 1 drachm, still no effect. Next morning gave 2 drachms, in a syringe—no effect whatever; in an hour's time strychnine 6 grs. on meat—no effect. An hour after, 10 grs. on meat—dead in five minutes. The acid hydrocy. was recent: why had it no effect? Opium, it is known, is inert with dogs. With regard to the strychnine, my impression is that not less than 12 grs. should be given to large animals. This may be given in powder, as far more convenient than liquids. Perhaps more light may be afforded by some of our toxicological friends.

Yours very truly,
Sittingbourne: August 10. **T. S. Cocking.**

# MEDICAL GLEANINGS.

At the Kerry Summer Assizes, before Judge Keogh, a little light was let into Irish medical practice by a trial in which Dr. J. Abernethy Taylor summoned Dr. Bryan Kenny and Jeremiah Hayes, a public-house keeper' for assaulting him at Listowel, where all the parties resided. The two doctors met in the street and entered Hayes's house to get a half glass of brandy. Then Hayes and another man named Stephenson came in. To these followed one by one Mr. Delaney, Mr. Shanahan, and Dr. Dillon. Some discussion occurred between the doctors about the medical treatment followed at the Listowel Workhouse, where Dr. Kenny was medical attendant. According to Dr. Taylor's statement, Dr. Kenny struck him twice on the back of the head, and brought blood, to which argument he (Dr. Taylor) did not reply at the moment, but went home and fetched a six-chambered revolver and fired it off in the air. After this simple amusement Mr. Hayes and Dr. Kenny attacked him more violently than ever, leaving him in an unconscious state. In cross-examination witness would not deny that he had sometimes been unconscious through drink. Then the following conversation took place between the witness and the judge. Judge Keogh: Are you an apothecary?—Yes. You compound medicines?—Yes. Do you compound for public institutions?—No, my lord. Do you compound medicines when you are in that state you have described from drink?—I never go into my place of business when I have taken drink. Who makes up the medicines that time?—No one, my lord. Are you married?—Yes. Does your wife make up medicines?—No, my lord. Have you an assistant?—Not at present. And suppose anybody comes for medicine to your establishment, who guarantees that it will be compounded for them?—If I am not seen they all go away. Is there another apothecary in the town?—Yes, my lord. What is his name?—Roche, my lord. Is he as given to drink as you are?—I have no idea, my lord. Does he take drink?—I suppose he would take a drink, my lord. Judge Keogh: This inquiry is of great importance to the inhabitants of Listowel. They have apothecaries carrying revolvers who do not compound when they are in a state of collapse? I think Listowel must be a happy place (loud laughter). Another doctor, Ulysses Fitzmaurice, M D., gave a picturesque account of Dr. Taylor's injuries, but it was elicited that both he and Dr. Dillon had been candidates for the medical officership of the Listowel Workhouse, which Dr. Kenny had obtained. The judge directed an acquittal.

⁂

The committee of the Invalids' Home Association appointed to consider the subject of home hospitals for the well-to-do have determined to appeal to the public for funds to enable them to open one or more well-fitted homes. It is proposed to follow the system adopted in the governorship of some of the public schools. A contributor of 50 guineas and upwards will be a governor of the association, with the following privileges—eligibility to serve on the committee of management, priority of admission to the homes, and power to nominate patients. Other donors will have privileges equal to the amount of their donation. Surplus funds will be devoted to the extension of the movement. It is believed the Invalids' Home Association will thus be the means of relieving the present hospitals from much of the existing pressure. Should the scheme succeed, it is intended to combine invalid homes in town with institutions in the country, where the cure of convalescent patients may be completed.

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Another Quinine Substitute.—Mr. George Brown, F.R.C.S., Colebrooke Row, London, N., has proposed, in the *Lancet*, that strychnine should be used to replace quinine during the present scarcity. He has found that the official solution of strychnine may be used with good effect in nearly every case of ordinary practice in which quinine would formerly have been ordered. As a tonic in cases of general debility and nervous prostration, and in neuralgia, it is quite equal to quinine. If the latter were only prescribed when absolutely necessary it would soon be at a reasonable price. Of course the dose of strychnine needs to be carefully watched.

# Trade Notes.

Mr. H. Bollmann Condy has opened a City depôt at 66 Queen Victoria Street, E.C., nearly opposite the Mansion House Station.

⁂

The wholesale drug business of Messrs. Sang & Barker, Barony Street, Glasgow, has been disposed of by private contract.

⁂

Mr. W. H. Solomon has recently removed from Hanley to Northwood, where he has been appointed Post Master. Mr. H. B. Dixon is his successor.

⁂

Cobden's Tasteless Quinine and Phosphorus Pills.—Half-ounce bottles, containing 20 about pills, filled up with pink wool and selling at 2*s.* 9*d.* The whole wrapped as usual. Pills neatly coated. Recommended as a general nerve tonic. Manufactured by the Sussex Drug Company.

⁂

Mr. P. A. Stevens, chemist and dentist, of 20 Hyde Road, Hoxton, makes an excellent stopping for teeth. with gutta percha as the basis, called Prepared Silvery White Enamel, which is neatly put up in various styles to retail at 1*d.*, 3*d.*, 4*d.*, and 6*d.* per box. We have examined a sample, which seems very suitable for its purpose.

⁂

We have received from Messrs. Wilkinson & Co.. Baker's Hill, Sheffield, a sample of their Universal Magic Purifying Drops. They assure us that these drops are the result of 50 years' study, and are compounded from balsams, herbs, and plants from eastern climes, regardless of expense, their *sole aim* being to produce a preparation which would crush out of existence the noxious, unwholesome and poisonous drugs which are in so many cases fatal to health and longevity. There is nothing like having an object in life.

⁂

Unguentum Petrolei is a special form of vaseline, prepared by Houghton & Co., Philadelphia, U.S.A. Messrs. Allen & Hanburys are the wholesale consignees. It was the first of its kind introduced in America, and has the largest sale there. It has the consistence of ceratum cetacei, a pleasant yellowish brown hue, tinged with a slight appearance of fluorescence, and a very slight pleasant odour, as if it had been slightly perfumed. Even when warmed it develops no odour of petroleum. It is put up in 1-lb., 5-lb., and 10-lb. tins, and seems thoroughly reliable.

⁂

We are informed that owing to the large increase in their business during the last few years the Silicated Carbon Filter Company, of Battersea, have added to their already extensive premises the greater portion of those lately occupied by the old-established chemical works of Messrs. Foote. We may point with satisfaction to the persistent manner in which this company have occupied space in our advertising columns, affording as it does one more illustration of the fact that money judiciously spent in advertising is not absolutely thrown away.

⁂

Dr. Oscar Liebreich's Syrup of Chloral, manufactured by Messrs. Corbyn, Stacey & Co., is a new preparation, formulated by Dr. Liebreich, and certified by him to be thoroughly trustworthy. Our readers will remember a paper on chloral by Dr. O. Liebreich, which was published in a recent number of this journal. In it he demonstrated the fact that many of the accidents that arise from the use of chloral are owing to the impurities it contains. We pointed out in a subsequent issue what an advantage a guaranteed preparation of chloral would be to the retail trader and to the public. The preparation before us seems intended to supply this advantage. It is guaranteed to be of uniform strength, and to be made from pure chloral. It is put up very neatly in 6-oz. bottles, selling at 3*s.* Each tablespoonful contains 15 grains of chloral. The flavour of the chloral is so skilfully disguised that little besides the sugar can be tasted. We think it is likely to become very popular.

# EXCHANGE COLUMN.

TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the Publisher of THE CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to the "Publisher of THE CHEMIST AND DRUGGIST, Colonial Buildings, Cannon Street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

## FOR DISPOSAL.

1 bottle quicksilver, 9*l.* cash. Colton, Selby.

Large gilded tooth. Taylor, Chemist, Rugby.

10 dozen genuine porous plasters, 6*s.* 10*d.* per dozen. 20/66.

What cash offers for Muter's "Chemistry," equal to new. 2/67.

Six dozen Dr. Jenkyns' cough elixir, 36*s.*, cash; 2 ozs. potassium, 8*s.*; ½ oz. quiniæ val., 7*s.*; Hambridge, Midsomer Norton.

Fine Turkey opium, P.B., 18*s.* per lb. for cash, carriage paid. Robson, Chemist, Grimsby.

*The Chemist and Druggist* for 1875 and 1876. What offers? Warwick, Chemist, Hartlepool.

Sixteen 1-gall. Maw's upright store bottles, with gold labels, and gilt tin caps, to be sold cheap. 18/66.

A dentist's outside show-case, very elaborate, 9*l.*, cost 20*l.* Natali, 213 Old Street, E C.

Evans, Lescher & Evans' 32*s.* cabinet of materia medica, cheap, in good condition. "Alpha," 1 Caroline Street, Hull.

*Pharmaceutical Journal*, posted on day of issue, for 2½*d.* per week. J. Todd, Carlisle.

Iron pestle and mortar, 16 inches diameter; 1-gallon tincture press. Sutton, 100 High Holborn.

Beautiful old violin, case, two bows. Fine tone, price ten guineas. Webb, Chemist, Calne.

All necessary apparatus for mechanical dentistry. Good condition. "Spes," Goldwin's Library, Rochester.

Oil foots and grease, from the washings of oil casks. W. & T. Jones & Co., 98 Southwark Street, S.E.

Ten 2-gallon green glass stock bottles; several pear-shaped carboys; cheap. 21/61.

*Pharmaceutical Journals* for sale, several years; list sent; highest offer taken. Connor, Alresford, Hants.

Complete set of lessons for "Minor" (Tully's Postal System), slightly soiled, cost 21*s.*; price 8*s.*; herbarium, 5*s.* A. J. Edwards, Mrs. Burden's, High Street, Hythe.

Student's herbarium of the officinal and other leading indigenous plants (120), mounted and named, 10*s.* 6*d.* Tully, Chemist, Tunbridge Wells.

What offers for *Pharmaceutical Journal*, bound, from 1841 to 1870 inclusive, and index to first fifteen volumes? Atkins, Essex Road, Islington.

Bargain, a powerful monocular microscope; also a pocket microscope. For particulars apply to J. D., 110 Stokes Croft Road, Bristol.

Offers wanted, or exchange. Splendid set of 15 forceps, &c.; 14 lbs. quicksilver; six 1-oz. phials Howard's quinine. 24/65.

What offers for ten 3*s.* tins Chapman's wheat flour in good condition, and a quantity of syr. violæ ver. Cash or saleable exchange. Johnson, Chemist, Ashby-de-la-Zouch.

Insect powder, finest quality, 14 lbs. 1*s.*; 28 lbs. 11*d.*; 56 lbs. 10*d.* Bale, 9*d.* Cash with order; two stamps for sample. Lockwood, Druggist, Sheffield.

Sale or exchange. Screw cutting lathe, planed iron gap-bed, 4½-inch centres, balanced driving wheel, 14 change wheels, &c. 35/63.

Bargains.—Nests of drawers, show bottles, specie jars, glazed cases, shop bottles, shop jars (all colours), scales, &c.; also counter cases for cigars, tobacco jars, scales, &c. 294 Old Kent Road.

Superbly finished double-barrelled breech-loading gun, 12 gauge, central fire, double grip, best bar, rebounding locks, percussion fence, finest Damascus barrels and latest improvements; cost 16*l.* 16*s.*, never used, 8*l.* Halford, Chemist, New John Street, Birmingham.

Dows & Clark's iced cream drinks apparatus, six taps, with cylinder, complete. Read, 2 Market Terrace, Upper Holloway.

What offers? Herman's "Physiology," Ganot's "Physics," Fresenius' "Analysis," Plattner "On Blowpipe," Huxley's "Biology," Rutherford's "Histology," all new books; also new dispensing screen by Treble. 30/61.

Botany.—Herbarium, containing the officinal plants, and all the orders required for the Minor and Major examinations, recently mounted, only 10*s.* 6*d.* Higginson, Newferry, Birkenhead.

White tapered daffy corks, 25 100-gross bags at 4½*d.* per gross, usual price, 8*d.* to 10*d.* per gross; not less than 1 bag sold; sample sent on receipt of postage stamp. Frederick Gibson, 93 Gooch Street, Birmingham.

Quarter-plate camera and lens, by Cox, complete, worth 50*s.*; what offers? Also electric apparatus, 10-inch cylinder machine, ebony stand, Leyden jars, &c., 25*s.*, worth 40*s.* "Chemist," Longfleet, Poole.

A good mahogany counter soda water stand, fig. 62, Maw's catalogue; four 4-gall. carboys, 3 glass-top cases for counter, 25 by 13; plate-glass shelving, &c. Casely, Homœopathic Chemist, Camden Town.

A bent plate-glass counter case, 9 ft. 6 long, 21 in. wide, fitted with 8 velvet trays, looking-glass back, as Maw's, 9*l.* 10*s.*, almost new; also sponge case, as 92, 5*l.*; and soda-water stand, Maw's 62, 50*s.* A. N. E., 127 Dynevor Road, Stoke Newington, London.

About 300 stoppered bottles, 50 jars, 178 deal-painted drawers all gold-labelled; counters and show cases. Excellent opportunity for young man commencing business. A bargain, advertiser refitting. W. B. Harrison, 6 Bridge Street, Sunderland.

Pair of handsome specie jars, with burnished gold coat of arms on each, and covers, 3*l.* the pair, or offers; 24-inch handsome globe-shape lamp, painted and gilt, glazed with ruby glass, and two solid 7-inch lenses, in good condition, 5*l.*, or offers. Isaac Garrett, 10 Queen's Road, Brighton.

*Pharmaceutical Journals* from 1853 to 1865, both inclusive, complete and cloth bound; 1874 in weekly numbers, complete; from 1874 to present date in weekly numbers, 5 missing; *The Chemist and Druggist* from July, 1874, to present date, November, 1875, only missing. Offers wanted. Westlake, Sutton, Surrey.

Old foreign cigars in prime condition, very cheap, from 8*s.* to 20*s.* per hundred; Vevy Fins 3*s.*, and Manilla cheroots, 9*s.* per hundred; or will exchange for good saleable goods, drugs, patent medicines, oils, paints, and colours; samples post free, 3 for 7*d.*; 6 for 13*d.* Thomas, Commercial Place, Aberdare, Glamorganshire.

Wanted, offers for two 4-gall., one 3-gall., two 2-gall., one 1-gall. carboys, with round mahogany stand; a 9-feet counter, mahogany, a little defaced; also a Maw's show case, fig. 159, with "Dispensing Department" on it. Patent medicines, or other goods, would be taken in exchange. G. Hayward, Chemist, Croydon.

An 18 4-grain Bushby pill machine, with pressing rollers and knife at each end, stamp, and all complete, good as new, cost 10 guineas, the advertiser having no further use for it; also about two doz. wide-mouth 3-pints, black store or digesting bottles, with caps, flat tops, labels; moderate, what offers? George Clarke, 7 Blossom Street, Ancoats, Manchester.

A bent plate-glass counter case, 5 ft. 2 long, 5*l.*; 2 ditto ditto, 3 ft. 2 in. long, each 3*l.*; a 6 ft., as 105, 6*l.*; sponge case, as 92, 5*l.*; a 6 ft. 6 dispensing screen, glass case at each side, looking-glass centre, with marble slab in front, with tablets on top "Dispensing Department," looking-glass back to cases and shifting shelves inside, 9*l.*, a bargain; a 6 ft., as 164 Maw's, looking-glass back, 7*l.* 10*s.*; a 5 ft., as 164 Maw's, 6*l.*; an upright case, to stand on floor, 4 ft. 6 long, 3 ft. high, marble top, glass doors and sides, 5*l.*; soda-water stand, 62, 50*s.*; a 4 ft. 8 plate-glass counter case, as 16, 66*s.*; a 5 ft. 2, as fig. 96, 90*s.*; a 5 ft., as 99, one sheet of plate glass, 6*l.* 10*s.*; tooth brush cases, 25*s.* and 31*s.* 6*d.*; a desk and case, as fig. 21, looking-glass back to case, 75*s.*; several nests of drawers, about 3 ft. 3 long, 1*s.* 9*d.* per drawer; a case for front of desk, 2 ft. long, 2 ft. 4 high, 45*s.* Natali, 213 Old Street, E.C.

Three dozen Bright's gastro-splenic pills; Cooper's restorative; Brown's chlorodyne; Whelpton's pills (purifying); Rooke's pills and elixir; Morgan's henna pomade; Stedman's powders; Long's maggot and foot rot lotions; Taylor's cow drinks; Simpson's 6*d.* cattle spice; all in good condition; less 20 per cent. off wholesale price; carriage paid on 1*l.* worth assorted. Fowler, Boston, Lincolnshire.

A wall case of pine stained mahogany, 6 feet long 9 feet high, 90*s.*; the fittings and drugs of an entire shop, 100*l.*; lot of best 3 mo. flonts, 10*s.* per gross, equal to Maw's at 18*s.* per gross; M. Tomlinson's papier mouche fly paper, 20*s.* per thousand, usual price 28*s.*; a lot of patent medicines at half selling price; mahogany glass case, flat, 30 by 13, 11*s.*; 24 by 12, 9*s.*: 12 by 8, 2*s.* 6*d.*; 20 by 16, 20*s.*; 48 by 20, plate, 80*s.*; 30 by 15, 12*s.*; 30 by 26, 15*s.* 6*d.*; 30 by 24, 15*s.*; 24 by 15, plate glass, 15*s.*; about 300*l.* worth of sundries, bought at sale of M. Tomlinson, of Manchester, to be sold very cheap; good glass sign, 7 feet long, "Chemist and Druggist," 27*s.* 6*d.*, ready to put up, in frame; write for lists, &c., to R. Tomlinson, valuer and shop fitter, 15 St. Paul's Square, Birmingham.

Upright case, 4½ ft. long 42 in. high, a very good case, tablet "Dispensing Department," 65*s.*; 12 ft. wall case, nearly new, pine stained mahogany colour and varnished, 9 ft. high, 10*l.*; nest of 20 large dovetailed drawers for under counter, 40*s.*; a common desk and case, about 24 inches square, 25*s.*; case with mirror and marble slab in centre, three tablets on top, mahogany front, nearly new, 110*s.*; twenty-four 4-lb. blue jars, nearly new, newly gold-labelled, 56*s.*; eighteen 4-oz. blue jars, labelled, 7*s.* 6*d.*; 200 shop rounds, assorted, the lot 110*s.*; shelving enough for a shop, mahogany edged, 20*s.*; specie jars; 1 jar royal arms, equal to new, 30 inches high, ornamental glass cover, 60*s.*, worth 85*s.*; a pair 30 inches high, royal and pharmaceutical arms, new, gilt glass covers, 115*s.*; about 10 smaller sizes, equally low; a lot of pink ointment jars, at about half-price; desk and case, as Treble's 76A, in good condition, 60*s.*; ebonised glass case, with mirror in centre and tablet on top, forming a nice dispensing screen, 5½ feet long, 25 inches to cornice, 65*s.*; upright mahogany case, 6 feet long 30 inches high, 45*s.* R. Tomlinson, 15 St. Paul's Square, Birmingham.

Entire fittings chemist's shop, about 25 ft. in length; 200 mahogany shop drawers, with lockers, &c., shelving above, in sections; five handsome mahogany embossed plate and silvered window enclosures; three silvered and embossed plate-glass doors; handsome partitions for end of shop to form parlour, with silvered plate-glass doors, &c.; fifteen mahogany wall cases with and without cupboards under, from 2 to 20 ft. long; eighteen mahogany top counters, from 3½ ft. to 24 ft. long; quantity mahogany shop drawers with and without shelving and pilasters above, in various lengths; quantity dispensing screens, counter cases, desks, shop chairs, shop lamps, brass stall plates, mortars and pestles; counter drawers and label chests. From the above extensive superior stock any size shop can be fitted at half the usual cost. Lloyd Rayner, 333 Kingsland Road, London, N.

Three doz. handsomely labelled show jars, as fig. D Maw's, height from 10 to 14 in.; 13 4-lb. handsome labelled lozenge jars, 12 in. high; 30 jujube jars, as fig. 2 Maw's; 20 elaborately labelled specie jars, sizes from 16 up to 32 in. high, great bargains; 5 doz. new 3-lb. olive and blue shop jars, 27*s.* 6*d.* doz.; 4 doz. ½-lb. new olive and blue shop jars, 6*s.* 3*d.* doz.; 1 doz. 4-lb., ½ doz. 1-lb., 10 ½-lb. handsome new marone jars, as fig. 1 Maw's; 10 doz. second-hand shop jars, all sizes, great bargains; 50 12-oz. and 2-lb. handsome white porcelain gold-labelled shop jars; 5 4-gall. swan neck carboys; 5 4-gall. pear-shape carboys; 2 10-gall. carboys; 1 14-gall. carboy; 9 upright show bottles, 2 ft. high, cut stoppers; quantity druggists' store canisters and boxes; 860 gold-labelled shop bottles, all sizes; 2 doz. each 20 and 40-oz. blue syrup bottles; 20 patent oil bottles; 80 black glass store bottles; 1,500 gold paper labels, all sizes; 400 glass labels; quantity glass tablets, "Teeth Extracted," &c., in gold; 2 glass percolators; 4 tincture presses: 5 pill and pastille machines; including every utensil required by the trade. Lloyd Rayner, 333 Kingsland Road, London, N.

Rushton & Co., Chemists, Exeter having purchased the business of Messrs. Giles & Co., have the following surplus stock for sale, all new last year, viz:—One 2-horse power horizontal steam engine and vertical boiler; one Barnett's No. 3 machine, complete; bottling machine; one patent stopper bottling machine, syrup pump, steam syrup pan, wiring stand, two large tanks, two vans, &c.; will be sold together or separate. This offers a rare opportunity for anyone about to commence the business.

Five 3-gall. pear-shape carboys, 5*s.* each; three 4-gall. cylinder-shape do., 6*s.* each; 12 doz. 8-oz. shop bottles, 5*s.* doz.; 1 doz. 50-oz. blue syrups, plugs, and good labels, 12*s.*; 1 doz. quart do., 10*s.*; 16 1½-gall. black stock bottles, japanned caps, good labels, 1*s.* 8*d.* each; 1 doz. 2-lb. blue jars, japanned covers, 15*s.* doz.; 1 doz. do. do., 8-oz., 4*s.* 6*d.* doz.; eleven 8-lb. blue ointment jars, japanned covers, 2*s.* 3*d.* each; 1 doz. 4-lb. white ointment jars, 1*s.* 6*d.* each; 11 4-lb. blue ointment jars, 4 lbs., 1*s.* 6*d.* each; several glass jars, as fig. D, from 6*d.* each; a 4 foot 9 plate-glass counter case, as 105, 6*l.*; a pair specie jars, royal arms, 4*l.*; a pair do., elaborately labelled, 55*s.*; one only jar, large jar, 36 in. high, royal arms, gold cover, almost new, 95*s.*; a 12 5-grain pill machine, 9*s.*; a 24 5-grain pill machine, 12*s.* 6*d.*; a 1½-gall. tincture press, fig. 2 Maw's, 35*s.*; 3 counter looking glasses, one 60 by 30, 50*s.*, in frame, as good as new; glass shelving, &c. Natali, 213 Old Street, E.C.

## FORMULÆ.

Recipe for a compound by which a ship was cleared of 581 rats in two hours, 10*s.* 6*d.* Walker, 13 Annfield Row, Dundee.

An eminent V. S. will forward prescriptions for colic draughts and cough powders for horses, 5*s.* each. Apply, R. H. Dyer, Glentworth Street, Limerick, Ireland.

Recipe for excellent lavender water, 1*s.* 6*d.*; twenty well tried recipes for horse and cattle medicines, 5*s.* "Chemist," care of Mr. Filtness, Rotherfield.

A collection of questions asked at the Minor, 2*s.* 6*d*; "Notes on Dispensing," with prescriptions given to dispense at the Minor, 2*s.* 6*d.*; herbarium of indigenous plants, invaluable to Minor students. 7*s.* 6*d.*; "Notes on Equation Writing," 9*d.* "Chemist," care of Mr. Filtness, Rotherfield.

## WANTED.

A 1 or 2-grain pill machine. Orchard, Salisbury.

Mixing machine for 28 or 56 lbs. horse powders. 35/63.

"Year-Books of Pharmacy," the complete set. State price to Symons, Queen's Terrace, Finchley Road.

Petroleum cistern, to hold 100 to 120 gallons. Address, Field, Chemist, Wigan.

Clean but unsaleable patent medicines bought, from 7½*d.* size to 11*s.*: send list. 21/66.

Two second-hand mahogany shop chairs. Taylor, Chemist, Rugby.

Recipe for unseparable lime juice and glycerine for wholesale trade. J., Bank Street, Rawtenstall.

Second-hand shop fittings. Apply, stating price and particulars, Austen, Chemist, Southampton.

Attfield's "Chemistry," sixth edition, lowest price, or will exchange Fownes'. Dodd, 52 Crescent, Clifton, Bristol.

Two 12-gall. pear-shaped carboys and stands. F. H. Foster, Chemist, Plymouth.

Kelly's "Chemists' and Druggists' Directory;" state lowest price. 2 Copenhagen Street, Islington.

*The Chemist and Druggist* for February, 1870. 44A Cannon Street, E.C.

Aërated water syphons, in good condition; state maker's name and price. B. Q., Fronal & Co., 46 Churton Street, London, S.W.

## ADDRESSES AND INFORMATION WANTED.

The address of Mr. Smith, some years with Bower Brothers, Chester, wanted by J. Thompson, Hanover Street, Liverpool.

Address of Samuel Henry Morris, short, stout, with red beard, lately been travelling for Howard Hall, drug manufacturer Spitalfields, London.

THE declared value of British and Irish exports during the month of July amounted to 17,587,301*l*., against 16,084,587*l*. in the corresponding month last year, exhibiting an increase of no less than 1,502,714*l*. Although, therefore, our total for the year so far as it has yet gone still remains about 2½ millions below the total reached in the same period of 1876 (and the whole of 1876 was more than 20 millions behind 1875) there seem some grounds for hoping that the process of shrinkage to which we have been so long accustomed has at last been arrested. When two months' returns so near together as May and July both indicate a distinct advance, it is a fair presumption that the improvement is not accidental.

Some vigorous efforts have been made by the Lancashire chemical manufacturers to advance quotations, and in the early part of the month there was appearance of considerable strength. But the attempt was evidently made too early. Products were always obtainable at previous rates, and before long the fictitious quotations were abandoned. There is, nevertheless, the fact that many of the works are better employed than they have been for some time, and considerable orders for heavy chemicals are on hand. Bleaching powder is weaker, and for a good order can be bought at 6*s*. per cwt. in London, though nominally 6*s*. 3*d*. is the price. Arsenic has been advanced, and is now quoted 9*s*. 6*d*. to 10*s*. 6*d*. for powdered, instead of 8*s*. 6*d*.

There is little alteration in tartaric acid, English being quoted 1*s*. 5½*d*. to 1*s*. 5¾*d*. per lb. for crystals or powdered, and foreign 1*s*. 5*d*. to 1*s*. 5¼*d*. for crystals. Citric dull at 2*s*. 7½*d*. Oxalic unchanged in value at 5*d*. per lb., but demand not so active.

Sulphate of copper is still dull at 21*s*. 3*d*. per cwt. for ordinary first quality.

Chlorate of potash without improvement, the quotation for spot delivery being still 8½*d*. per lb., although some business has been done at a point less; prussiate still dull at 10¾*d*. to 11¼*d*. per lb. Bichromate reduced to 4*d*. per lb. less discount.

Refined saltpetre more freely offered at 26*s*. to 27*s*. per cwt. according to packages.

Iodine has been reduced 1*d*. per ounce, in the hope of tempting business. Quicksilver has been rapidly advanced, and is now quoted 9*l*. 5*s*. to 9*l*. 10*s*., being 2*l*. higher than a month ago. This makes a difference of about 5*d*. per lb. to mercurials. Quinine has declined a good bit in the month, English being obtainable at 13*s*. 6*d*. and French at 1*s*. lower. The guinea per ounce which was so confidently predicted in some quarters is rapidly receding from the range of probability, for this year at any rate. Bromine is scarce, and has advanced considerably.

In drugs the demand has not been active, though a fair steady business has been transacted. General Gourko's excursion into the rose district has caused a considerable advance in otto, which, in fact, is not to be bought in London in quantity. Opium is in a doubtful position. The probability is, however, that the crop has been a good one, and that prices will rule low. The market is very dull. The crop of henbane leaves has been a comparative failure, and the preparations of them will therefore be much higher. Ergot is much cheaper. High rates have been obtained for gum benjamin, but the advance has not been maintained. Arnica flowers are scarcer this year, but chamomiles are said to be abundant, and when received in quantity are likely to be cheaper. Colocynth is very scarce, but copaiba is in abundant supply and lower.

At last drug sales there was a considerable demand for castor oil, and a large quantity was bought at a fractional advance over previous prices, sales being made for Calcutta seconds at 4½*d*. Jamaica honey made 45*s*. Bark was in firm supply, though none of first-class quality was offered. Prices were appreciably lower. Some good E.I., which would have made 6*s*. or 7*s*. a few weeks back, was bought in at 4*s*. 3*d*. Balsam copaiba was not wanted, and Para, red to pale, was bought in at 1*s*. 5½*d*. to 1*s*. 6*d*. Peru bought in at 5*s*. and 5*s*. 2*d*., and Canada at 1*s*. 3*d*. Some white French chalk was sold at 7*l*. 2*s*. 6*d*. per ton. Good Spanish cream of tartar was bought in at 100*s*. A supply of essence of lemon of inferior quality went for 5*s*., but no buyers were to be had for some bergamot at 8*s*. There was no change in the price of gums. Ten bales of Condurango sold at 3*d*., though it is not clear what becomes of it ultimately. Coca leaves were bought in at 2*s*., and Jaborandi at 8*d*. Opium was held, but buyers were not disposed to give the required prices. Musk made rather higher rates. Castile soap was bought in at 30*s*., Jamaica bees' wax made 8*l*. 2*s*. 6*d*. for some fine yellow down to 7*l*. for darker qualities. Barbadoes tamarinds made 24*s*.; Dominica 20*s*.

Shellac has fluctuated a good deal during the month, but reports of failure from India have occasioned some lively speculation. Although dull just now, it is from 5*s*. to 10*s*. per cwt. better than a month ago.

Linseed oil and rape oil have gone on steadily hardening during the month, and are still very firm. A distinct advance, too, has been made in olive oils. Speculators in Italy are very confident of higher prices and are buying up to their full ability, and as it seems pretty certain that the last crop was a short one this anticipation will most likely be realised.

Below is a statement of the stocks, landings, and deliveries of the following goods at the Port of London from January 1 to July 31, 1877 and 1876:—

| | Stocks | | Landed | | Delivered | |
|---|---|---|---|---|---|---|
| | 1877 | 1876 | 1877 | 1876 | 1877 | 1876 |
| Aloes..................cs | 1,735 | 1,619 | 1,092 | 1,970 | 1,721 | 1,004 |
| ,, ...............kegs | 21 | 31 | — | 1 | 4 | 1 |
| ,, ............gourds | 2,022 | 837 | 1,626 | 862 | 1,263 | 1,009 |
| Aniseed, Star ......chts | 1,381 | 812 | 263 | 1,381 | 612 | 810 |
| Arrowroot ..........cks | 13,819 | 12,241 | 11,602 | 13,468 | 7,589 | 7,238 |
| ,, ......bxs & tins | 7,289 | 4,807 | 7,296 | 6,854 | 4,191 | 4,099 |
| Balsam ..........cks, &c. | 398 | 348 | 327 | 563 | 285 | 400 |
| Bark, Medicinal ..cks, &c. | 667 | 216 | 2,056 | 502 | 1,539 | 416 |
| ,, ..........srns, &c. | 9,157 | 12,229 | 14,066 | 22,360 | 13,585 | 26,648 |
| ,, .......... turs tns | 3,672 | 2,961 | 5,652 | 4,791 | 6,730 | 2,783 |
| Borax ..............pkgs | 1,138 | 1,950 | 409 | 2,883 | 672 | 2,830 |
| Bees' Wax......bls & srns | 355 | 373 | 93 | 336 | 152 | 374 |
| ,, ......cks & cs | 1,069 | 804 | 1,396 | 1,286 | 1,297 | 955 |
| ,, ........cakes | 155 | 6 | 138 | 522 | 102 | 1,252 |
| Japan vegetable ..pkgs | 8,937 | 5,071 | 5,095 | 4,246 | 3,689 | 5,468 |
| Camphor.............pkgs | 6,977 | 4,216 | 5,194 | 1,873 | 4,624 | 4,927 |
| Cardamoms..........chts | 781 | 887 | 437 | 1,128 | 487 | 806 |
| Cocculus Indicus bgs, &c. | 2,132 | 2,276 | 2 | 402 | 259 | 324 |
| Colombo root........pkgs | 985 | 924 | 375 | 154 | 106 | 138 |
| Cream of Tartar ......cks | 130 | 46 | 198 | 172 | 161 | 192 |
| Cubebs ..............bgs | 265 | 471 | 30 | 216 | 45 | 130 |
| Dragonsblood........chts | 112 | 38 | 144 | 80 | 92 | 79 |
| Galls, E.I. ......cks & cs | 5,280 | 1,611 | 6,963 | 3,947 | 3,164 | 3,589 |
| Mediterranean ......sks | 816 | 2,074 | 1,046 | 1,359 | 687 | 759 |
| Gum— | | | | | | |
| Ammoniac ........pkgs | 480 | 530 | 139 | 33 | 147 | 115 |
| Animi & Copal .... ,, | 8,206 | 4,776 | 8,207 | 1,990 | 4,822 | 5,638 |
| Arabic, Barbary .... ,, | 857 | 429 | 1,422 | 963 | 1,571 | 1,423 |
| Turkey .......... ,, | 387 | 836 | 836 | 1,540 | 731 | 1,605 |
| E.I............... ,, | 1,807 | 1,320 | 1,888 | 1,673 | 1,714 | 1,561 |
| Asafœtida ........ ,, | 441 | 493 | 438 | 102 | 349 | 218 |
| Benjamin .......... ,, | 1,190 | 877 | 1,417 | 1,387 | 824 | 964 |
| Damar ............ ,, | 818 | 784 | 591 | 2,490 | 1,896 | 2,325 |
| Galbanum.......... ,, | 32 | 27 | 10 | — | 10 | 2 |
| Gamboge .......... ,, | 181 | 105 | 188 | 129 | 216 | 181 |
| Guaiacum ........ ,, | 5 | 62 | 106 | 91 | 110 | 59 |
| Kino .............. ,, | 16 | 13 | 5 | 13 | 7 | 15 |
| Kowrie ............tns | 909 | 994 | 1,043 | 1,033 | 943 | 992 |
| Mastic ..........pkgs | 113 | 87 | 23 | 19 | 20 | 96 |
| Myrrh, E.I. ........ ,, | 338 | 275 | 368 | 291 | 285 | 252 |
| Olibanum .......... ,, | 4,658 | 3,849 | 7,667 | 6,249 | 4,458 | 4,900 |
| Sandarac .......... ,, | 409 | 586 | 970 | 1,002 | 1,077 | 976 |
| Senegal ............tns | 13 | 40 | 2 | — | 7 | 1 |
| Tragacanth ......pkgs | 326 | 135 | 625 | 185 | 360 | 188 |
| Ipecacuanha....cks & bgs | 239 | 135 | 308 | 249 | 232 | 343 |
| Jalap ................bls | 631 | 631 | 248 | 110 | 267 | 183 |
| Nux Vomica ........pkgs | 2,263 | 1,711 | 987 | 3,668 | 235 | 4,176 |
| Oil— | | | | | | |
| Castor ............cks | — | 52 | 4 | 193 | 4 | 170 |
| ,, ............cs | 6,764 | 3,178 | 10,902 | 8,037 | 8,985 | 6,491 |
| ,, ..dpprs & tins | 4,174 | 4,856 | 6,812 | 11,167 | 5,055 | 11,457 |
| Palm ..............tns | 227 | 542 | 1,300 | 1,511 | 1,580 | 1,837 |
| Cocoanut .......... ,, | 4,014 | 3,799 | 7,195 | 5,692 | 5,927 | 5,549 |
| Olive ..........cks, &c. | 2,173 | 983 | 4,433 | 1,989 | 2,726 | 2,216 |
| Aniseed ............cs | 330 | 286 | 345 | 726 | 234 | 490 |
| Cassia .............. ,, | 718 | 207 | 453 | — | 137 | 109 |
| Opium ........chts, &c. | 763 | 450 | — | — | — | — |
| Plumbago ............tns | 3,696 | 4,111 | 1,211 | 1,401 | 1,314 | 1,341 |
| Rhubarb ............chts | 908 | 498 | 881 | 908 | 921 | 1,145 |
| Saltpetre, Pt. ........tns | 3,306 | 4,626 | 4,156 | 4,974 | 6,210 | 6,428 |
| Sarsaparilla ..........bls | 1,279 | 977 | 1,729 | 1,731 | 1,365 | 1,482 |
| Senna ..........bls, &c. | 2,696 | 2,199 | 2,476 | 889 | 2,311 | 1,442 |
| Shellac............cs, &c. | 35,286 | 21,246 | 27,910 | 24,162 | 19,523 | 20,152 |
| Sticklac ........chts, &c. | 3,871 | 2,189 | 2,418 | 2,151 | 1,679 | 2,544 |
| Terra Japonica, Gambier tns | 1,623 | 1,255 | 5,313 | 4,064 | 4,552 | 3,096 |
| Cutch ................ ,, | 3,069 | 3,115 | 1,965 | 1,887 | 1,614 | 1,741 |
| Turmeric ............ ,, | 717 | 375 | 1,148 | 733 | 1,069 | 790 |

# Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mincing Lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.

| CHEMICALS. | 1877. | | | | | 1876. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ACIDS— | s. | d. | | s. | d. | s. | d. | | s. | d. |
| Acetic ..........per lb. | 0 | 3½ | to | 0 | 0 | 0 | 3½ | to | 0 | 0 |
| Citric .......... ,, | 2 | 7 | .. | 2 | 7½ | 2 | 9 | .. | 0 | 0 |
| Hydrochlor......per cwt. | 5 | 0 | .. | 7 | 0 | 4 | 0 | .. | 7 | 0 |
| Nitric ..........per lb. | 0 | 4¾ | .. | 0 | 0 | 0 | 4¾ | .. | 0 | 0 |
| Oxalic .......... ,, | 0 | 4¾ | .. | 0 | 5 | 0 | 4½ | .. | 0 | 0 |
| Sulphuric ...... ,, | 0 | 0¾ | .. | 0 | 1 | 0 | 0¾ | .. | 0 | 1 |
| Tartaric crystal.. ,, | 1 | 5½ | .. | 1 | 5¾ | 1 | 4 | .. | 0 | 0 |
| powdered ,, | 1 | 5½ | .. | 1 | 5¾ | 1 | 4 | .. | 0 | 0 |
| ANTIMONY ore ......per ton | 240 | 0 | .. | 300 | 0 | 280 | 0 | .. | 300 | 0 |
| crude .. per cwt. | 37 | 0 | .. | 0 | 0 | 42 | 0 | .. | 0 | 0 |
| star...... ,, | 48 | 0 | .. | 0 | 0 | 59 | 0 | .. | 61 | 0 |
| ARSENIC, lump...... ,, | 26 | 6 | .. | 0 | 0 | 27 | 0 | .. | 28 | 0 |
| powder.... ,, | 9 | 6 | .. | 10 | 6 | 11 | 0 | .. | 0 | 0 |
| BRIMSTONE, rough ...per ton | 110 | 0 | .. | 0 | 0 | 125 | 0 | .. | 130 | 0 |
| roll .. per cwt. | 9 | 6 | .. | 0 | 0 | 10 | 0 | .. | 10 | 3 |
| flour.... ,, | 12 | 0 | .. | 13 | 6 | 13 | 0 | .. | 14 | 0 |
| IODINE, dry ........per oz. | 0 | 9¼ | .. | 0 | 9½ | 0 | 6 | .. | 0 | 0 |
| IVORY BLACK, dry .. per cwt. | 8 | 6 | .. | 0 | 0 | 8 | 6 | .. | 0 | 0 |
| MAGNESIA, calcined..per lb. | 1 | 10 | .. | 0 | 0 | 1 | 8 | .. | 0 | 0 |
| MERCURY ........per bottle | 185 | 0 | .. | 190 | 0 | 180 | 0 | .. | 0 | 0 |
| MINIUM, red ...... per cwt. | 22 | 6 | .. | 0 | 0 | 23 | 3 | .. | 0 | 0 |
| orange .. ,, | 33 | 0 | .. | 0 | 0 | 37 | 0 | .. | 0 | 0 |
| PRECIPITATE, red . per lb. | 4 | 2 | .. | 0 | 0 | 4 | 3 | .. | 0 | 0 |
| white ,, | 4 | 1 | .. | 0 | 0 | 4 | 2 | .. | 0 | 0 |
| PRUSSIAN BLUE .. ,, | 0 | 0 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| SALTS— | | | | | | | | | | |
| Alum ............per ton | 140 | 0 | .. | 145 | 0 | 145 | 0 | .. | 155 | 0 |
| powder...... ,, | 157 | 6 | .. | 160 | 0 | 160 | 0 | .. | 165 | 0 |
| Ammonia: | | | | | | | | | | |
| Carbonate...... per lb. | 0 | 5 | .. | 0 | 5¼ | 0 | 5 | .. | 0 | 5¼ |
| Hydrochlorate, crude, white ........ per ton | 540 | 0 | .. | 700 | 0 | 560 | 0 | .. | 700 | 0 |
| British (*see* Sal Am.) | | | | | | | | | | |
| Sulphate........ per ton | 406 | 0 | .. | 469 | 0 | 380 | 0 | .. | 390 | 0 |
| Argol, Cape ......per cwt. | 75 | 0 | .. | 90 | 0 | 80 | 0 | .. | 87 | 0 |
| Red........ ,, | 67 | 0 | .. | 72 | 0 | 70 | 0 | .. | 75 | 0 |
| Oporto, red. ,, | 33 | 0 | .. | 34 | 0 | 33 | 6 | .. | 34 | 0 |
| Sicily ...... ,, | 0 | 0 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| Ashes (*see* Potash and Soda) | | | | | | | | | | |
| Bleaching powd...per cwt. | 6 | 3 | .. | 0 | 0 | 6 | 6 | .. | 0 | 0 |
| Borax, crude...... ,, | 27 | 0 | .. | 38 | 0 | 30 | 0 | .. | 40 | 0 |
| British refnd. ,, | 40 | 0 | .. | 0 | 0 | 43 | 0 | .. | 0 | 0 |
| Calomel ..........per lb. | 3 | 9 | .. | 0 | 0 | 3 | 10 | .. | 0 | 0 |
| Copper: | | | | | | | | | | |
| Sulphate ....per cwt. | 21 | 6 | .. | 22 | 0 | 22 | 0 | .. | 0 | 0 |
| Copperas, green..per ton | 60 | 0 | .. | 65 | 0 | 65 | 0 | .. | 70 | 0 |
| Corrosive Sublimate p. lb. | 3 | 2 | .. | 0 | 0 | 3 | 3 | .. | 0 | 0 |
| Cr. Tartar, French, p. cwt. | 100 | 0 | .. | 101 | 0 | 106 | 0 | .. | 107 | 0 |
| brown ,, | 90 | 0 | .. | 0 | 0 | 77 | 0 | .. | 82 | 6 |
| Epsom Salts ....per cwt. | 4 | 3 | .. | 5 | 3 | 5 | 3 | .. | 7 | 0 |
| Glauber Salts .... ,, | 3 | 6 | .. | 4 | 6 | 4 | 6 | .. | 5 | 6 |
| Lime: | | | | | | | | | | |
| Acetate, white, per cwt. | 11 | 0 | .. | 20 | 0 | 11 | 0 | .. | 20 | 0 |
| Magnesia: Carbonate ,, | 47 | 6 | .. | 0 | 0 | 45 | 0 | .. | 0 | 0 |
| Potash: | | | | | | | | | | |
| Bichromate ....per lb. | 0 | 3¾ | .. | 0 | 4 | 0 | 4¾ | .. | 0 | 0 |
| Carbonate: | | | | | | | | | | |
| Potashes, Canada, 1st sort ......per cwt. | 24 | 0 | .. | 0 | 0 | 24 | 6 | .. | 0 | 0 |
| Pearlashes, Canada, 1st sort ......per cwt. | 34 | 0 | .. | 0 | 0 | 28 | 6 | .. | 0 | 0 |
| Chlorate ......per lb. | 0 | 8¼ | .. | 0 | 8½ | 0 | 8½ | .. | 0 | 0 |
| Prussiate ........ ,, | 0 | 11 | .. | 0 | 11½ | 0 | 11 | .. | 0 | 0 |
| red.... ,, | 0 | 0 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| Tartrate (*see* Argol and Cream of Tartar) | | | | | | | | | | |
| Potassium: | | | | | | | | | | |
| Chloride......per cwt. | 0 | 0 | .. | 0 | 0 | 7 | 0 | .. | 0 | 0 |
| Iodide ........per lb. | 13 | 0 | .. | 0 | 0 | 7 | 6 | .. | 0 | 0 |
| Quinine: | | | | | | | | | | |
| Sulphate, British, in bottles ......per oz. | 13 | 6 | .. | 13 | 9 | 7 | 8 | .. | 0 | 0 |
| Sulphate, French ,, | 12 | 6 | .. | 0 | 0 | 7 | 3 | .. | 0 | 0 |
| Sal Acetos ......per lb. | 0 | 7½ | .. | 0 | 7½ | 0 | 7½ | .. | 0 | 0 |
| Sal Ammoniac, Brit. cwt. | 44 | 0 | .. | 45 | 0 | 44 | 0 | .. | 45 | 0 |
| Saltpetre: | | | | | | | | | | |
| Bengal, 6 per cent. or under ......per cwt. | 22 | 9 | .. | 23 | 6 | 18 | 0 | .. | 18 | 6 |
| Bengal, over 6 per cent. per cwt. | 22 | 0 | .. | 22 | 6 | 17 | 6 | .. | 17 | 9 |
| British. refined ,, | 26 | 0 | .. | 27 | 0 | 21 | 6 | .. | 22 | 9 |
| Soda: Bicarbonate, p. cwt. | 10 | 9 | .. | 11 | 0 | 10 | 9 | .. | 11 | 0 |
| Carbonate: | | | | | | | | | | |
| Soda Ash ..per deg. | 0 | 1 11/16 | .. | 0 | 0 | 0 | 1⅜ | .. | 0 | 0 |
| Soda Crystals per ton | 85 | 0 | .. | 0 | 0 | 80 | 0 | .. | 0 | 0 |
| Hyposulphite, per cwt. | 0 | 0 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| Nitrate ...... per cwt. | 14 | 6 | .. | 15 | 0 | 11 | 3 | .. | 11 | 6 |
| SUGAR OF LEAD, White cwt. | 37 | 6 | .. | 38 | 0 | 40 | 0 | .. | 0 | 0 |
| Brown, cwt. | 27 | 0 | .. | 0 | 0 | 27 | 0 | .. | 0 | 0 |
| SULPHUR (*see* Brimstone) | | | | | | | | | | |

| | 1877. | | | | | 1876. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | s. | d. | | s. | d. | s. | d. | | s. | d. |
| VERDIGRIS ......... per lb. | 1 | 1 | t | 1 | 5 | 1 | 1 | to | 1 | 5 |
| VERMILION, English ,, | 3 | 6 | .. | 0 | 0 | 3 | 2 | .. | 0 | 0 |
| China ,, | 2 | 9 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| **DRUGS.** | | | | | | | | | | |
| ALOES, Hepatic ....per cwt. | 70 | 0 | .. | 180 | 0 | 60 | 0 | .. | 160 | 0 |
| Socotrine .. ,, | 85 | 0 | .. | 220 | 0 | 65 | 0 | .. | 180 | 0 |
| Cape, good.. ,, | 53 | 0 | .. | 54 | 0 | 43 | 0 | .. | 44 | 0 |
| Inferior .... ,, | 47 | 0 | .. | 52 | 0 | 36 | 0 | .. | 42 | 0 |
| Barbadoes .. ,, | 50 | 0 | .. | 210 | 0 | 45 | 0 | .. | 180 | 0 |
| AMBERGRIS, grey........oz. | 74 | 0 | .. | 83 | 0 | 58 | 0 | .. | 65 | 0 |
| BALSAM— | | | | | | | | | | |
| Canada............per lb. | 1 | 1 | .. | 0 | 0 | 1 | 2 | .. | 0 | 0 |
| Capivi ............ ,, | 1 | 5 | .. | 1 | 6 | 1 | 9 | .. | 1 | 10 |
| Peru.............. ,, | 5 | 0 | .. | 0 | 0 | 5 | 0 | .. | 5 | 0 |
| Tolu.............. ,, | 6 | 0 | .. | 6 | 6 | 0 | 0 | .. | 0 | 0 |
| BARKS— | | | | | | | | | | |
| Canella alba......per cwt. | 21 | 0 | .. | 28 | 6 | 25 | 0 | .. | 27 | 0 |
| Cascarilla ........ ,, | 16 | 0 | .. | 20 | 0 | 16 | 6 | .. | 24 | 0 |
| Peru, crown & grey per lb. | 1 | 6 | .. | 2 | 9 | 1 | 2 | .. | 2 | 9 |
| Calisaya, flat ,, | 1 | 3 | .. | 5 | 0 | 2 | 0 | .. | 4 | 6 |
| ,, quill ,, | 2 | 0 | .. | 8 | 0 | 2 | 0 | .. | 4 | 6 |
| Carthagena ,, | 0 | 9 | .. | 5 | 11 | 1 | 5 | .. | 2 | 2 |
| Columbian .. ,, | 1 | 9 | .. | 6 | 0 | 1 | 0 | .. | 3 | 4 |
| E. I. ........ ,, | 1 | 6 | .. | 6 | 6 | 2 | 0 | .. | 6 | 0 |
| Pitayo ...... ,, | 0 | 6 | .. | 1 | 6 | 0 | 7 | .. | 1 | 9 |
| Red ........ ,, | 2 | 3 | .. | 5 | 0 | 1 | 9 | .. | 4 | 6 |
| Buchu Leaves........ ,, | 0 | 2½ | .. | 1 | 6 | 0 | 1 | .. | 1 | 1 |
| CAMPHOR, China ..per cwt. | 92 | 6 | .. | 95 | 0 | 62 | 6 | .. | 63 | 6 |
| Japan .. ,, | 97 | 6 | .. | 100 | 0 | 65 | 0 | .. | 68 | 0 |
| Refin. Eng. per lb. | 1 | 3 | .. | 1 | 4 | 1 | 0 | .. | 0 | 0 |
| CANTHARIDES........ ,, | 2 | 9 | .. | 5 | 6 | 2 | 6 | .. | 3 | 6 |
| CHAMOMILE FLOWERS p. cwt. | 50 | 0 | .. | 200 | 0 | 40 | 0 | .. | 57 | 0 |
| CASTOREUM ........per lb. | 9 | 0 | .. | 30 | 0 | 7 | 0 | .. | 25 | 0 |
| DRAGON'S BLOOD, lp. p. cwt. | 100 | 0 | .. | 260 | 0 | 117 | 0 | .. | 200 | 0 |
| FRUITS AND SEEDS (*see also* Seeds *and* Spices). | | | | | | | | | | |
| Anise, China Star per cwt. | 92 | 0 | .. | 100 | 0 | 85 | 0 | .. | 102 | 6 |
| Spanish, &c. ,, | 30 | 0 | .. | 35 | 0 | 26 | 0 | .. | 40 | 0 |
| Beans, Tonquin....per lb. | 1 | 9 | .. | 2 | 7 | 1 | 7 | .. | 2 | 6 |
| Cardamoms, Malabar good ............ ,, | 5 | 0 | .. | 5 | 11 | 3 | 6 | .. | 4 | 0 |
| inferior.... ,, | 1 | 6 | .. | 4 | 5 | 0 | 10 | .. | 3 | 4 |
| Aleppy .... ,, | 3 | 2 | .. | 4 | 4 | 2 | 0 | .. | 3 | 9 |
| Madras.... ,, | 2 | 2 | .. | 3 | 10 | 2 | 0 | .. | 3 | 3 |
| Ceylon .... ,, | 3 | 6 | .. | 5 | 0 | 4 | 0 | .. | 5 | 0 |
| Cassia Fistula....per cwt. | 10 | 0 | .. | 32 | 0 | 8 | 0 | .. | 14 | 0 |
| Castor Seeds .... ,, | 0 | 0 | .. | 0 | 0 | 5 | 0 | .. | 10 | 6 |
| Cocculus Indicus ,, | 9 | 0 | .. | 11 | 6 | 9 | 0 | .. | 11 | 0 |
| Colocynth, apple ..per lb. | 0 | 0 | .. | 0 | 0 | 0 | 6 | .. | 0 | 11 |
| Croton Seeds ....per cwt. | 30 | 0 | .. | 0 | 0 | 32 | 6 | .. | 0 | 0 |
| Cubebs.......... ,, | 27 | 0 | .. | 28 | 0 | 30 | 0 | .. | 0 | 0 |
| Cummin ........ ,, | 10 | 0 | .. | 20 | 0 | 16 | 0 | .. | 20 | 0 |
| Dividivi ........ ,, | 12 | 0 | .. | 18 | 0 | 10 | 0 | .. | 15 | 0 |
| Fenugreek ...... ,, | 8 | 0 | .. | 11 | 0 | 15 | 0 | .. | 22 | 0 |
| Guinea Grains .. ,, | 0 | 0 | .. | 0 | 0 | 21 | 6 | .. | 0 | 0 |
| Juniper Berries ,, | 8 | 0 | .. | 10 | 0 | 8 | 0 | .. | 10 | 0 |
| Nux Vomica.. .. ,, | 11 | 0 | .. | 15 | 0 | 8 | 6 | .. | 13 | 0 |
| Tamarinds, East India,, | 11 | 0 | .. | 18 | 0 | 13 | 0 | .. | 16 | 0 |
| West India ,, | 17 | 0 | .. | 23 | 0 | 11 | 0 | .. | 19 | 0 |
| Vanilla, large .... per lb. | 16 | 0 | .. | 25 | 0 | 30 | 0 | .. | 43 | 0 |
| inferior ,, | 11 | 0 | .. | 17 | 0 | 13 | 0 | .. | 28 | 0 |
| GINGER, Preserved, per lb. | 0 | 4½ | .. | 0 | 7 | 0 | 5¼ | .. | 0 | 8 |
| HONEY, Chili .... per cwt. | 32 | 0 | .. | 42 | 0 | 43 | 0 | .. | 46 | 0 |
| Jamaica ,, | 30 | 0 | .. | 43 | 0 | 36 | 0 | .. | 53 | 0 |
| Australian ,, | 0 | 0 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| IPECACUANHA .... per lb. | 4 | 10 | .. | 5 | 6 | 3 | 10 | .. | 4 | 6 |
| ISINGLASS, Brazil.. ,, | 2 | 10 | .. | 5 | 0 | 2 | 2 | .. | 4 | 8 |
| Tongue sort ,, | 3 | 6 | .. | 5 | 4 | 2 | 6 | .. | 5 | 0 |
| East India ,, | 2 | 2 | .. | 5 | 6 | 0 | 9 | .. | 4 | 9 |
| West India ,, | 4 | 0 | .. | 4 | 10 | 4 | 0 | .. | 4 | 11 |
| Russ. long staple | 8 | 0 | .. | 15 | 0 | 9 | 0 | .. | 12 | 6 |
| ,, inferior | 0 | 0 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| ,, Simovia | 2 | 2 | .. | 3 | 3 | 2 | 0 | .. | 3 | 3 |
| JALAP, good...... ,, | 0 | 8 | .. | 0 | 10 | 0 | 7 | .. | 0 | 9 |
| infer. & stems ,, | 0 | 7 | .. | 0 | 7½ | 0 | 6 | .. | 0 | 6½ |
| LEMON JUICE .... per degree | 0 | 1 | .. | 0 | 1½ | 0 | 1 | .. | 0 | 1½ |
| LIME JUICE........per gall. | 0 | 0 | .. | 0 | 0 | 1 | 3 | .. | 1 | 8 |
| LIQUORICE, Spanish per cwt. | 34 | 0 | .. | 39 | 0 | 0 | 0 | .. | 0 | 0 |
| Liquorice Root ,, | 0 | 0 | .. | 0 | 0 | 12 | 0 | .. | 30 | 0 |
| MANNA, flaky ......per lb. | 0 | 0 | .. | 0 | 0 | 5 | 6 | .. | 6 | 0 |
| small ...... ,, | 0 | 0 | .. | 0 | 0 | 1 | 6 | .. | 1 | 9 |
| MUSK, Pod..........per oz. | 13 | 6 | .. | 45 | 0 | 16 | 0 | .. | 40 | 0 |
| Grain........ ,, | 40 | 0 | .. | 50 | 0 | 51 | 0 | .. | 60 | 0 |
| OILS (*see also separate list*) | | | | | | | | | | |
| Almond, expressed per lb. | 1 | 4 | .. | 0 | 0 | 1 | 6 | .. | 0 | 0 |
| Castor, 1st pale.... ,, | 0 | 4½ | .. | 0 | 5 | 0 | 4 | .. | 0 | 4¾ |
| second .... ,, | 0 | 4⅛ | .. | 0 | 4½ | 0 | 3¼ | .. | 0 | 3½ |
| Cod Liver ...... per gall. | 4 | 6 | .. | 7 | 6 | 5 | 6 | .. | 7 | 6 |
| Croton .......... per oz. | 0 | 2½ | .. | 0 | 0 | 0 | 2½ | .. | 0 | 0 |
| Essential Oils: | | | | | | | | | | |
| Almond ........per lb. | 20 | 0 | .. | 0 | 0 | 20 | 0 | .. | 0 | 0 |
| Anise-seed ...... ,, | 6 | 6 | .. | 6 | 9 | 7 | 0 | .. | 0 | 0 |
| Bay ..........per cwt. | 0 | 0 | .. | 0 | 0 | 65 | 0 | .. | 70 | 0 |
| Bergamot ...... per lb. | 10 | 0 | .. | 15 | 0 | 10 | 0 | .. | 15 | 0 |
| Cajeput......per bottle | 3 | 0 | .. | 3 | 6 | 2 | 9 | .. | 3 | 0 |
| Caraway........per lb. | 9 | 0 | .. | 9 | 3 | 9 | 0 | .. | 9 | 3 |
| Cassia .......... ,, | 3 | 6 | .. | 0 | 0 | 4 | 2 | .. | 0 | 0 |
| Cinnamon ......per oz. | 2 | 6 | .. | 6 | 0 | 2 | 6 | .. | 6 | 6 |
| Cinnamon-leaf .. .. | 0 | 2¼ | .. | 0 | 3 | 0 | 2½ | .. | 0 | 3 |
| Citronelle ...... ,, | 0 | 1¾ | .. | 0 | 0 | 0 | 1¼ | .. | 0 | 2 |
| Clove ..........per lb | 8 | 6 | .. | 0 | 0 | 8 | 9 | .. | 0 | 0 |
| Juniper ........ ,, | 0 | 0 | .. | 0 | 0 | 0 | 0 | .. | 0 | 0 |
| Lavender ......per lb. | 1 | 5 | .. | 7 | 0 | 1 | 8 | .. | 7 | 0 |
| Lemon.......... ,, | 7 | 0 | .. | 9 | 6 | 7 | 0 | .. | 9 | 6 |
| Lemongrass ....per oz. | 0 | 2½ | .. | 0 | 0 | 0 | 2½ | .. | 0 | 0 |

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|---|---|---|---|---|
| Essential Oils, *continued*:— | s. d. | s. d. | s. d. | s. d. |
| Neroli ..........per oz. | 3 0 | 6 6 | 3 0 | 6 6 |
| Nutmeg ........ ,, | 0 5½ | 0 5¾ | 0 7 | 0 7½ |
| Orange..........per lb. | 6 0 | 9 0 | 6 0 | 9 0 |
| Otto of Roses....per oz. | 16 0 | 22 0 | 13 0 | 25 0 |
| Patchouli ...... ,, | 1 9 | 3 0 | 2 0 | 3 6 |
| Peppermint: | | | | |
| American ....per lb. | 13 0 | 14 3 | 16 0 | 0 0 |
| English ...... ,, | 34 0 | 35 0 | 32 0 | 34 0 |
| Rosemary ...... ,, | 2 0 | 2 6 | 2 0 | 2 6 |
| Sassafras ...... ,, | 2 3 | 2 6 | 2 3 | 2 6 |
| Spearmint ...... ,, | 12 0 | 15 0 | 14 0 | 16 0 |
| Thyme.......... ,, | 0 0 | 0 0 | 0 0 | 0 0 |
| Mace, expressed ..per oz. | 0 6 | 0 10 | 0 6 | 0 10 |
| Opium, Turkey ......per lb. | 21 0 | 22 6 | 19 6 | 21 6 |
| inferior ...... ,, | 10 0 | 18 0 | 9 0 | 13 0 |
| Quassia (bitter wood) per ton | 100 0 | 130 0 | 100 0 | 140 0 |
| Rhubarb, China, good and fine ..............per lb. | 3 0 | 3 6 | 4 16 | 5 0 |
| Mid. to ord....... ,, | 0 9 | 2 8 | 1 0 | 3 3 |
| Dutch Trimmed.. ,, | 0 0 | 0 0 | 8 0 | 8 6 |
| ROOTS—Calumba..per cwt. | 28 0 | 34 0 | 25 0 | 28 0 |
| China ............ ,, | 30 0 | 32 0 | 19 0 | 24 0 |
| Chiretta ..........per lb. | 0 2½ | 0 3 | 0 3½ | 0 4 |
| Galangal ........per cwt. | 24 0 | 26 0 | 19 0 | 22 0 |
| Gentian .......... ,, | 22 0 | 24 0 | 23 0 | 24 0 |
| Hellebore ........ ,, | 0 0 | 0 0 | 0 0 | 0 0 |
| Orris ............ ,, | 26 0 | 75 0 | 26 0 | 75 0 |
| Pellitory.......... ,, | 70 0 | 76 0 | 60 0 | 64 0 |
| Pink ..............per lb. | 0 0 | 0 0 | 0 0 | 0 0 |
| Rhatany.......... ,, | 0 4 | 1 0 | 0 4 | 0 8 |
| Seneka............ ,, | 3 6 | 4 0 | 3 6 | 0 0 |
| Snake ............ ,, | 0 6 | 0 6½ | 0 6 | 0 7 |
| Saffron, Spanish .. ,, | 33 0 | 37 0 | 24 0 | 36 0 |
| Salep ............ per cwt. | 0 0 | 0 0 | 0 0 | 0 0 |
| Sarsaparilla, Lima per lb. | 0 5 | 0 7 | 0 6 | 0 8 |
| Guayaquil ........ ,, | 1 10 | 2 2 | 1 9 | 1 11 |
| Honduras ........ ,, | 1 0 | 1 4 | 1 3 | 1 6 |
| Jamaica .......... ,, | 1 3 | 2 9 | 2 8 | 3 0 |
| Sassafras ........per cwt. | 0 0 | 0 0 | 0 0 | 0 0 |
| Scammony, Virgin ..per lb. | 24 0 | 30 0 | 24 0 | 30 0 |
| second & ordinary ,, | 6 0 | 22 0 | 6 0 | 22 0 |
| Senna, Bombay .... ,, | 0 1 | 0 4 | 0 1 | 0 4 |
| Tinnivelly ........ ,, | 0 1¼ | 1 6 | 0 2 | 1 3 |
| Alexandria........ ,, | 0 5 | 2 0 | 0 5 | 2 8 |
| Spermaceti, refined ,, | 1 3 | 1 4 | 1 4 | 0 0 |
| American ........ ,, | 1 0 | 1 1 | 1 0 | 1 1 |
| Squills ............ ,, | 0 1½ | 0 3½ | 0 3 | 0 4 |
| **GUMS.** | £ s. | £ s. | £ s. | £ s. |
| Ammoniaci drop .. per cwt. | 2 2 | 2 6 | 1 15 | 2 15 |
| lump.. ,, | 0 17/6 | 1 14 | 1 0 | 1 10 |
| Animi, fine washed ,, | 11 0 | 12 15 | 11 0 | 12 10 |
| bold scraped ,, | 9 15 | 10 15 | 9 10 | 10 15 |
| sorts ...... ,, | 6 15 | 9 10 | 6 10 | 9 5 |
| dark ...... ,, | 4 0 | 6 10 | 4 0 | 6 0 |
| Arabic, E.I., fine pale picked .. ,, | 3 0 | 3 17 | 3 0 | 4 0 |
| srts., md. to fin. ,, | 2 5 | 2 14 | 2 10 | 2 18 |
| garblings .. ,, | 1 6 | 2 0 | 1 2 | 2 4 |
| Turkey, pick. gd. to fin. ,, | 6 0 | 9 10 | 6 0 | 10 0 |
| second & inf. ,, | 3 0 | 5 15 | 2 10 | 5 10 |
| in sorts .. ,, | 2 10 | 3 16 | 1 15 | 2 5 |
| Gedda .... ,, | 1 16 | 3 8 | 1 3 | 1 6 |
| Barbary, white .. ,, | 0 0 | 0 0 | 2 4 | 2 16 |
| brown .. ,, | 1 15 | 1 19 | 1 10 | 1 14 |
| Australian...... ,, | 1 17 | 2 15 | 1 15 | 2 5 |
| Assafœtida, cm. to fm ,, | 0 16 | 4 0 | 0 15 | 1 10 |
| Benjamin, 1st & 2nd ,, | 0 0 | 0 0 | 10 0 | 36 0 |
| Sumatra 1st & 2nd ,, | 7 10 | 11 5 | 6 10 | 15 0 |
| 3rd | 3 0 | 5 0 | 3 10 | 5 0 |
| Copal, Angola red ,, | 6 0 | 6 15 | 6 0 | 6 15 |
| Benguela ,, | 4 0 | 5 0 | 4 0 | 5 0 |
| | s. d. | s. d. | s. d. | s. d. |
| Sierra Leone, per lb. | 0 6 | 0 10 | 0 7½ | 0 11 |
| Manilla....per cwt. | 20 0 | 28 0 | 15 0 | 27 0 |
| Dammar, pale .... ,, | 66 0 | 75 0 | 60 0 | 63 0 |
| Singapore .... ,, | 65 6 | 74 0 | 60 0 | 63 0 |
| Euphorbium .... ,, | 9 0 | 15 0 | 12 0 | 20 0 |
| Galbanum ........ per lb. | 0 5 | 1 3 | 0 6 | 1 6 |
| Gamboge, pckd. pipe per cwt. | 210 0 | 250 0 | 200 0 | 260 0 |
| Guaiacum ..........per lb. | 1 3 | 2 6 | 1 0 | 3 2 |
| Kino..............per cwt. | 40 0 | 50 0 | 40 0 | 50 0 |
| Kowrie, rough .. ,, | 25 0 | 40 0 | 30 0 | 49 0 |
| scraped sorts ,, | 42 0 | 55 0 | 50 0 | 60 0 |
| Mastic, picked ....per lb. | 4 0 | 5 0 | 4 0 | 5 0 |
| Myrrh, gd. & fine per cwt. | 150 0 | 240 0 | 170 0 | 0 0 |
| ord. to fair.... ,, | 70 0 | 130 0 | 100 0 | 150 0 |
| Olibanum, p. drop ,, | 47 0 | 52 0 | 51 0 | 54 0 |
| amber & ylw. ,, | 42 0 | 46 0 | 45 0 | 50 0 |
| garblings.... ,, | 10 0 | 25 0 | 15 0 | 26 0 |
| Senegal ........ ,, | 65 0 | 0 0 | 50 0 | 60 0 |
| Sandarac........ ,, | 80 0 | 100 0 | 85 0 | 100 0 |
| Shellac, Orange.. ,, | 90 0 | 99 0 | 95 0 | 140 0 |
| Liver .. ,, | 83 0 | 91 0 | 90 0 | 110 0 |
| Thus ............ ,, | 20 0 | 21 6 | 20 0 | 22 0 |
| Tragacanth, leaf ,, | 240 0 | 400 0 | 240 0 | 400 0 |
| in sorts ,, | 25 0 | 175 0 | 25 0 | 175 0 |
| **OILS.** | £ s. | £ s. | £ s. | £ s. |
| Seal, pale ........per tun | 33 10 | 0 0 | 32 10 | 33 0 |
| yellow to tinged ,, | 31 10 | 33 0 | 30 0 | 32 0 |
| brown ...... ,, | 31 0 | 0 0 | 29 0 | 29 10 |
| Sperm............ ,, | 80 0 | 0 0 | 84 0 | 85 0 |
| Body ...... ,, | 0 0 | 0 0 | 0 0 | 0 0 |
| Cod .............. ,, | 36 0 | 0 0 | 43 0 | 0 0 |

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|---|---|---|---|---|
| Oils, *continued*:— | £ s. | £ s. | £ s. | £ s. |
| Whale, South Sea, pale, per tun | 35 10 to | 36 0 | 34 10 to | 35 0 |
| yellow ,, | 33 0 | 35 0 | 32 0 | 34 0 |
| brown ,, | 31 0 | 0 0 | 28 0 | 30 0 |
| East India, Fish ,, | 25 5 | 0 0 | 26 0 | 0 0 |
| Olive, Gallipoli ...per ton | 49 0 | 0 0 | 45 0 | 0 0 |
| Gioja........ ,, | 49 0 | 0 0 | 44 0 | 0 0 |
| Levant .... ,, | 47 0 | 47 10 | 0 0 | 0 0 |
| Mogador .... ,, | 46 10 | 0 0 | 0 0 | 0 0 |
| Spanish .... ,, | 0 0 | 0 0 | 0 0 | 0 0 |
| Sicily ...... ,, | 48 10 | 49 0 | 0 0 | 0 0 |
| Cocoanut, Cochin.. ,, | 43 10 | 0 0 | 39 0 | 40 0 |
| Ceylon ,, | 38 10 | 0 0 | 37 0 | 0 0 |
| Mauritius ,, | 38 15 | 0 0 | 30 0 | 36 10 |
| Ground Nut and Gingelly: | | | | |
| Bombay ................ | 0 0 | 0 0 | 0 0 | 0 0 |
| Madras ................ | 45 0 | 0 0 | 36 10 | 0 0 |
| Palm, fine................ | 39 0 | 39 10 | 36 0 | 0 0 |
| Linseed ................ | 29 10 | 0 0 | 24 0 | 0 0 |
| Rapeseed, English, pale .. | 40 0 | 0 0 | 36 5 | 0 0 |
| brown ...... | 38 0 | 0 0 | 34 5 | 0 0 |
| Foreign, pale .. | 0 0 | 0 0 | 0 0 | 0 0 |
| brown ........ | 0 0 | 0 0 | 0 0 | 0 0 |
| Cottonseed .............. | 32 10 | 31 0 | 29 5 | 0 0 |
| Lard .................... | 50 0 | 0 0 | 57 0 | 50 0 |
| Tallow .................. | 30 0 | 54 0 | 28 0 | 4 0 |
| | s. d. | s. d. | s. d. | s. d. |
| Turpentine, American, cks. | 25 9 | 26 0 | 22 6 | 0 0 |
| French ,, | 0 0 | 0 0 | 0 0 | 0 0 |
| Petroleum, Crude ........ | 0 0 | 0 0 | 0 0 | 0 0 |
| refined, per gall. | 0 10½ | 0 10⅝ | 1 1⅝ | 1 1¾ |
| Spirit ,, | 0 8½ | 0 0 | 0 10½ | 0 0 |
| **SEEDS.** | | | | |
| Canary............per qr. | 50 0 | 60 0 | 55 0 | 76 0 |
| Caraway, English per cwt. | 50 0 | 56 0 | 0 0 | 0 0 |
| German, &c.... | 48 0 | 50 0 | 0 0 | 0 0 |
| Coriander .............. | 22 0 | 26 0 | 15 0 | 23 0 |
| Hemp..............per qr. | 0 0 | 0 0 | 40 0 | 45 0 |
| Linseed, English ,, | 66 0 | 70 0 | 0 0 | 0 0 |
| Black Sea & Azof | 0 0 | 0 0 | 48 0 | 0 0 |
| Calcutta ,, | 54 9 | 55 0 | 47 0 | 48 0 |
| Bombay ,, | 56 0 | 0 0 | 49 0 | 50 0 |
| St. Petrsbrg. ,, | 53 0 | 0 0 | 0 0 | 0 0 |
| Mustard, brown..per bshl. | 12 0 | 15 0 | 12 0 | 15 0 |
| white.. ,, | 13 0 | 16 0 | 13 0 | 16 0 |
| Poppy, East India, per qr. | 56 0 | 0 0 | 44 0 | 44 6 |
| **SPICES.** | | | | |
| Cassia Lignea ..per cwt. | 48 0 | 60 0 | 47 0 | 66 0 |
| Vera .......... ,, | 22 0 | 45 0 | 22 0 | 44 0 |
| Buds .......... ,, | 73 0 | 74 0 | 75 0 | 78 0 |
| Cinnamon, Ceylon: | | | | |
| 1st quality ......per lb. | 1 9 | 3 8 | 2 1 | 4 2 |
| 2nd do. ........ ,, | 1 6 | 2 9 | 1 8 | 3 0 |
| 3rd do. ........ ,, | 1 3 | 2 3 | 1 6 | 2 8 |
| Tellicherry ...... ,, | 2 6 | 2 10 | 2 9 | 3 0 |
| Cloves, Penang .... ,, | 2 0 | 0 0 | 1 11 | 2 0 |
| Amboyna ........ ,, | 1 4 | 1 6 | 1 5 | 1 6 |
| Zanzibar.......... ,, | 1 1 | 1 2 | 1 1 | 1 3 |
| Ginger, Jam., fine per cwt. | 91 0 | 202 6 | 95 0 | 202 6 |
| Ord. to good .... ,, | 52 0 | 90 0 | 48 0 | 90 0 |
| African .......... ,, | 29 0 | 0 0 | 30 0 | 0 0 |
| Bengal............ ,, | 22 6 | 0 0 | 28 0 | 29 0 |
| Malabar .......... ,, | 30 0 | 30 6 | 30 0 | 0 0 |
| Cochin .......... ,, | 53 0 | 115 0 | 50 0 | 120 0 |
| Pepper, Blk, Malabar, per lb. | 0 4¼ | 0 5½ | 0 4½ | 0 5⅝ |
| Singapore ........ ,, | 0 3¾ | 0 3⅞ | 0 3¾ | 0 3⅞ |
| White Tellicherry ,, | 0 10 | 1 4 | 0 10 | 1 4 |
| Cayenne .......... ,, | 1 9 | 2 8 | 2 4 | 2 10 |
| Mace, 1st quality .. ,, | 2 0 | 3 0 | 1 11 | 2 5 |
| 2nd and inferior .. ,, | 0 11 | 1 11 | 0 11 | 1 10 |
| Nutmegs, 78 to 60 to lb. ,, | 3 8 | 4 6 | 3 4 | 4 3 |
| 90 to 80 ,, ,, | 3 0 | 3 6 | 2 11 | 3 4 |
| 132 to 95 ,, ,, | 2 0 | 3 0 | 2 4 | 2 11 |
| Pimenta .................. | 0 4 | 0 4¼ | 0 3½ | 0 3¾ |
| **VARIOUS PRODUCTS.** | | | | |
| COCHINEAL— | | | | |
| Honduras, black ..per lb. | 2 4 | 2 9 | 1 9 | 2 5 |
| ,, silver .. ,, | 2 3 | 2 5 | 1 9 | 1 11 |
| ,, pasty .. ,, | 2 2 | 0 0 | 1 8 | 0 0 |
| Mexican, black .... ,, | 2 0½ | 2 1 | 1 8 | 1 10 |
| ,, silver.... ,, | 1 11½ | 2 0 | 1 7 | 1 8 |
| Teneriffe, black .. ,, | 2 2 | 3 0 | 1 9 | 2 9 |
| ,, silver .. ,, | 2 2 | 2 5 | 1 9 | 1 10 |
| SOAP, Castile......per cwt. | 26 0 | 33 0 | 33 0 | 34 0 |
| SOY, China ...... ,, gall. | 1 8 | 0 0 | 1 6 | 1 8 |
| SPONGE, Turk. fin. pkd pr lb. | 0 0 | 0 0 | 12 0 | 16 0 |
| Fair to good ,, | 0 0 | 0 0 | 4 0 | 11 0 |
| Ordinary .. ,, | 0 0 | 0 0 | 1 0 | 3 0 |
| Bahama.... ,, | 0 0 | 0 0 | 0 6 | 3 0 |
| TERRA JAPONICA— | | | | |
| Gambier ......per cwt. | 20 6 | 20 9 | 19 0 | 0 0 |
| Free cubes .... ,, | 26 0 | 28 0 | 26 6 | 29 0 |
| Cutch .......... ,, | 22 6 | 24 6 | 23 6 | 24 6 |
| WOOD, Dye, Bar ..per ton | £3 2/6 | £3 5 | £3 0 | 3 10 |
| Brazil ............ ,, | 14 0 | 20 0 | 0 0 | 0 0 |
| Cam.............. ,, | 18 0 | 32 0 | 18 0 | 29 10 |
| Fustic, Cuba ...... ,, | 8 0 | 8 10 | 8 10 | 9 0 |
| Jamaica ........ ,, | 5 10 | 6 0 | 5 10 | 6 0 |
| Logwood, Campeachy ,, | 8 15 | 9 0 | 9 0 | 10 0 |
| Honduras ...... ,, | 6 10 | 6 15 | 7 0 | 8 0 |
| St. Domingo .... ,, | 5 10 | 5 15 | 5 10 | 6 10 |
| Jamaica ........ ,, | 5 0 | 5 10 | 5 5 | 6 0 |
| Lima, first pile .... ,, | 8 15 | 10 10 | 8 0 | 9 0 |
| Red Sanders .... ,, | 6 0 | 0 0 | 6 0 | 0 0 |

## CARDAMOM CULTIVATION IN MYSORE.

Some time in February or March the felling party—one half of them provided with axes, and the rest with large hack-knives for clearing the underwood—proceed to the forest, with the necessary supplies of food, and commence operations by building, near to some stream, a temporary hut to shelter them at night. The next morning the head man of the party, who is necessarily well acquainted with the forest, and who has previously chosen the sites for the projected gardens, points out to the coolies the trees that are to be felled. Half of the party then commence to clear the underwood, while the remainder set to work with their axes and fell the large forest trees. The Coorgs have an idea that it is of great importance that the ground should be well shaken by the fall of some heavy tree, and if from any cause a tree does not crash down with sufficient force they fell another across it. Each plot generally consists of about the tenth part of an acre, and care is taken to leave about twenty to thirty yards of jungle between each garden, as well as not to make too many gardens in one year, lest there should be a too great and sudden diminution of the moisture which is so much required by the cardamom plants. From fifty to one hundred gardens are made annually, until the whole jungle is under cultivation. If presented in a plan, a cardamom jungle fully cultivated would be not unlike a checkered board.

In May, during the early rains of the south-west monsoon, the young plants shoot up all over the cleared ground, but especially near to the roots and stem of the fallen trees. By the October following they will have grown three or four inches, and by ensuing February will have attained a height of about one foot, with from eight to ten leaves on each plant. The seeds ripen in October, and in the fourth year, or about three years and a half from the springing of the plant, a small crop, called by the Coorgs "God fruit," will be gathered. At this time each rhizome will have thrown up about eight stems. After the plants have grown to the height of two feet the gardens must be annually weeded. When trees have reached the height of about four feet, or say in the third year, a little culling will be required, for each plant must have six feet of clear ground left around it. In removing superfluous plants, care must be exercised in preserving the strongest and healthiest looking specimens. In the fifth year the plants will give a good crop, and will probably continue to do so for the following seven years, when they will begin to present a sickly and exhausted appearance. It will then be necessary to select some large trees from the surrounding jungle, and fell them right across the sickly plots. This is generally done during the months of February and March, when the lands were originally prepared for cardamoms, but may also be done with great advantage some months earlier. Young plants will then spring up as before, and many of the old plants will have their stems and racemes killed by the fall, but from their rhizomes fresh stems will shoot, and the plants will bear with increased vigour for the next eight years, when the same process of renovation will have to be gone through again. The year in which the forest trees are thus felled the cardamom plots naturally give but little or nothing, and during the ensuing year but a light crop will be gathered. But this very much depends upon the quality of the soil, and on this also depends the early or late coming into bearing of the original garden. A cardamom jungle, if thus carefully worked, never becomes exhausted, and the cultivation may be continued on the same land for an indefinite period. One rhizome will often have over twenty stems, and, as these die off (and they seldom last longer than seven or eight years), fresh ones spring up to supply their place.

The fruit is occasionally borne on the upper part of the stem, but this is extremely rare, and I may mention that in Munzerabad I have never seen or heard of an instance of this departure from the ordinary habit of the plant. When from the stem four racemes are thrown out it is called by the natives the true or full crop; if three only, three-quarter crop; if two, half crop; and if one only, quarter crop. One raceme will have from eight to fourteen branches, and each branch from three to six pedicels.

When the plant is grown under the most favourable conditions these branches are grown close together; when, however, the conditions are unfavourable, the racemes are long and weak, and the branches far apart.—*Elliott's Planter in Mysore.*

## NOTES AND QUERIES

*Student* wishes to know who are eligible as competitors for our Chemistry Prizes, and what are the conditions?—Ans.: Anyone, of any age and standing, may compete for our prizes; but as they are offered for learners, it is expected that only learners will enter for them. You are only required to write for the sample for analysis, and to send in your paper at the times stated in our "Corner for Students." Thanks for your suggestion.

*B. H. O.*, British Seaman's Hospital, Oporto, wants (1) to get "Ammonia Alum" for making the logwood ink mentioned in our May number. Is unable to get it in London. Several chemists and druggists say they do not keep it. Would like to know where it can be obtained.—Ans.: Almost all the alum now in the market is ammonia alum, but it is not known by that name. It is simply called alum. You can easily ascertain the presence of ammonia by adding a little lime to a solution and heating. You will then smell the ammonia. (2) Is crystallised carbonate of soda the washing soda?—Ans.: Yes; but for ink making you had better use the purer recrystallised carbonate. (3) Can chromate of iron be used to replace chromate of potash in making ink? A blue-black ink, made with chromate of potash and logwood, did not darken, but gradually faded on exposure.—Ans.: Chromate of iron is insoluble, and therefore cannot replace chromate of potash. We think that your unsatisfactory results are due to the logwood extract, and not to the chemicals. Make experiments with small quantities of other samples.

*Beacon.*—Pulvis glycyrrhizæ co. of the Prussian Pharmacopœia is made as follows:—

| | |
|---|---|
| Senna | ℥vj. |
| Liquorice root | ʒvj. |
| Fennel seed | ℥iij. |
| Sulphur | ℥iij. |
| Refined sugar | ℥xviij. |

Mix the powders.

*A. M. P.* (Stornoway) wants approved formulæ for castor oil pills and Christison's pills.—Ans.: You will see in another column a trial relating to castor oil pills. Pil. rhei co. are almost always sold as castor oil pills, not because they contain castor oil, but because their action resembles that of the oil. It seems that this is not a legal plea. Possibly pil. rhei. co. might be made up with castor oil as the excipient. It certainly is not safe to sell pil. rhei co. as castor oil pills when made according to the P. B. formula. In some places pil. hyd. subchlor. co. P.B. are sold as castor oil pills. These do contain castor oil, but medically would sometimes be dangerous. We should advise our readers to sell pil. rhei. co. made up with castor oil when asked for castor oil pills. Christison's pills we do not know. Can any of our readers supply the formula?

*George Street.*—Your certificate is sufficient.

*A. R. W.* (Co. Antrim).—"Is a person who was in business prior to the passing of the late Pharmacy Act, simply as a retail druggist, but who did not dispense or 'fill' surgeons' prescriptions, entitled to be registered under the Act without passing any examinations, and to carry on his business as formerly?"—Ans.: We have made special inquiry on this subject, and find that chemists and druggists who were in business before the passing of the Act are in exactly the same position as if there was no Act. For the first year anyone might present himself for the Modified examination: he was asked nothing as to his antecedents. The last examination in connection with this takes place at the end of September. Everyone entering now must first pass the Preliminary examination, and before he can present himself for the Pharmaceutical examination must produce a certificate of having been engaged for two years in practical pharmacy, in the establishment of an Irish pharmaceutical chemist or apothecary keeping open shop. Our correspondent will see that although he cannot be registered he may still carry on his business, subject to the limitations of the Poisons Act (Ireland).

*Chemicus* (Natal) wishes to know "where he can procure a 'Coffey's Esculapian Still.' Mr. Coffey formerly lived at 4 Providence Row, Finsbury, but a letter sent to that address has been returned." Can any of our readers furnish the necessary information?

*Lewis Wing* (Chislehurst) writes:—"Can you tell me how vegetable substance, interwoven with woollen material, can be destroyed without injuriously affecting the latter? This can be and is done in some way I know; I have tried liquor potassæ and muriatic acid, without success, the wool being equally affected with the vegetable."—Ans.: We think there is some mistake here. We have never heard of the separation of wool from vegetable fibre by the destruction of the latter. Commercially, worn mixed fabrics are often utilised by subjecting them to superheated steam. This converts the wool into a powder, and leaves the vegetable fibre unharmed. The wool powder is used as manure, and the vegetable fibre serves for paper making and other purposes. Strong solution of zinc chloride and ammoniacal solution of oxide of copper are solvents for vegetable fibre, but they will probably injure the wool.

Supplement to the Chemist and Druggist.

# REPORT OF THE PROCEEDINGS
OF THE
# BRITISH PHARMACEUTICAL CONFERENCE.

## THE FOURTEENTH ANNUAL MEETING,
Held at Plymouth on Tuesday and Wednesday, August 14th and 15th, 1877.

Plymouth: *August* 15, 1877.

THE sudden transitions from northern to southern climates which the Pharmaceutical Conference has to undergo do not affect its vitality. The meetings at Plymouth, although, as was inevitable, not so numerously attended as those last year at Glasgow, have still been full of interest, and have brought forward a valuable store of pharmaceutical literature, which, in a somewhat condensed form, we reproduce in the following pages.

Very cordial thanks were given and were most justly due to the eminent president of the Conference for his opening address. That address, which we print in full, gives a history of the origin and development of the pharmaceutical profession which is at once complete, fair, and attractive. At the present time especially chemists and druggists will highly value the opportunity afforded them of reading their own history in the sketch so diligently and skilfully compiled by the best English pharmacologist living.

We cannot attempt here any complete analysis of the many papers submitted to the Conference. There were several of real pharmaceutic value. These will be readily distinguished by our readers. It is not a very wild criticism, however, to say that, roughly speaking, the least useful and the least interesting of the contributions to this meeting were those for which the Conference has devoted its hard-earned savings. The paper on Quinine, by Mr. Howard, attracted the most prominent attention, as we anticipated last month would be the case. The paper itself, however, was a disappointing one, considering the exceptional position and knowledge of the author. It contained no new information, and was in effect, whether Mr. Howard so intended it or not, an elaborate advertisement of an almost waste substance which, if it could be sold, would as things now are, be almost net profit to quinine manufacturers. If an unknown firm had offered such a paper it would almost certainly have been rejected; but so strong is the passion for "lending to the rich" that the members of the Conference went almost to the point of pledging themselves in some solemn manner to exert all their energy to work off this superfluous stock of cinchonidine. Mr. Schacht's remark that the consensus of opinion was largely in favour of quinine was met by a general contradiction. But he was obviously right, else why will that alkaloid fetch five or six times as much as its suddenly popular rival? The opinion may be wrong, but that it exists is beyond all doubt. In future efforts to sell their cinchonidine, we trust Messrs. Howard will, as Dr. Attfield says, "condescend to the usual method of advertisement."

Professor Redwood again made all those present observe his peculiar fitness to guide the discussions of such a company as this. From every paper that presented the smallest chance he was ready to extract its pharmaceutical moral, and if none was obtainable he was not afraid to enunciate his opinion of the unsuitableness of the paper. In this connection the remarks of Dr. Attfield respecting some of the "excessively chemical" contributions to the Conference were particularly welcome.

Mr. Schacht's paper on Pharmaceutical Laboratories was very attractive; and Mr. Atkins' would have no doubt yielded a lively discussion if it had not been thought expedient to stifle the indulgence in pharmaceutical politics. Mr. Edward Smith presented a lively paper on the Materia Medica of Devon, which alternated the grave and gay in pleasant harmony; and Messrs. Paul and Kingzett inaugurated perhaps the smartest and most important discussion by their paper on Copper in Preserved Peas. The attack on copper as a poisonous agent was vigorously conducted, but Dr. Redwood most ably defended the position he had taken in the prosecution of dealers in preserved peas contaminated with copper.

The necessity of publication precludes any report in this issue of the excursion which the chemists of the district have kindly arranged to add to the pleasure of their visitors. The programme is, however, tempting. A trip on "Tamar's glittering waves," with the many objects of interest which that river and the opposite shores of Devon and Cornwall offer to the sight-seer; a luncheon at Pentillie, a walk at Cotehele, an evening garden party in the lovely grounds of Mount Edgecumbe, and especially the pleasure of association with old and new friends, will be certain to make the Plymouth Thursday one of the most pleasing memories in connection with the records of the British Pharmaceutical Conference.

## TUESDAY, AUGUST 14.

THE President took the chair a few minutes after 10 A.M.

Mr. CODD (Devonport) expressed the pleasure with which the Plymouth pharmacists received the Conference, and trusted the members would derive gratification from their visit.

The senior honorary secretary (Professor ATTFIELD) then read out the names of delegates attending the Conference. He reminded the meeting that one of the objects of the Conference was to form a bond of union between the many provincial pharmaceutical associations. Delegates were present from the Pharmaceutical Society of Great Britain, from the Pharmaceutical Society of Ireland, and from local associations at Wolverhampton, Manchester, Bristol, Leeds, Birmingham, Glasgow, Liverpool, and Exeter.

The junior honorary secretary (Mr. F. B. BENGER) read letters from Mr. Brady, of Newcastle, and Mr. Reynolds, of Leeds, expressing regret at inability to be present.

Mr. BENGER next read the

### REPORT OF THE EXECUTIVE COMMITTEE.

IN presenting their fourteenth annual report the Executive Committee again avail themselves of the opportunity of congratulating the members of the British Pharmaceutical Conference on the continued prosperity and usefulness of the association.

The work of your committee during the past year presents no special features. The collection of members' subscriptions, the publication of the "Year-Book," and the issue of the usual lists of proposed subjects for research, and of circulars having reference to the present meeting are the chief items which have occupied their attention.

It will be seen from the balance sheet to be presented by the treasurer that practically the whole of the income of the Conference has this year been devoted to the advancement of scientific pharmacy. Your committee believe that such a disposal of the funds is in strict accordance with the intention of the founders of this association, and with the wishes of present members; and they may be excused for looking with some pride, as well as much satisfaction, to the important services which the Conference is now, year by year, rendering to pharmacy proper, and therefore to the practice of medicine, and to the sanitary interests of the community. These results are being achieved, first, by the character and amount of original matter directly communicated to the Conference by the authors of papers read at its annual meetings, or evolved during the discussion of such papers by the members present.

Then, secondly, by the substantial grants of money which your committee have been able to make to gentlemen undertaking special costly researches connected with pharmacy, original work of the highest importance is being promoted, and discoveries are made which will have interest and value wherever medicine and pharmacy are practised; whilst the investigation of difficult and complicated problems, such as that undertaken by Messrs. Groves, Williams & Wright on the aconite alkaloids, are of great scientific and probable practical importance; moreover, they are scarcely likely to be undertaken by individuals at their own expense, and are on that account the more suitable subjects to be investigated at the partial cost of the Conference.

Thirdly, by the production and distribution of the now well-known "Year-Book of Pharmacy."

Fourthly, by the pleasant and profitable friendly intercourse brought about amongst the widely-scattered pharmacists who assemble at our annual meetings.

The papers sent in to the secretaries to be read at the present meeting are of great and varied interest, and sufficiently numerous to fully occupy the two days devoted to their reading and discussion.

A number of applications for grants in aid of research were received and considered during the Glasgow meeting.

The following amounts have been drawn during the year by members to whom such grants were voted, and reports on the various subjects will be presented:—Mr. J. C. Thresh, F.C.S., for the purchase of materials in connection with an extended research on the active principle of capsicum fruit, 7*l.*; Dr. Tilden, F.C.S., for the purchase of essential oils required in research, 20*l.*; Dr. C. R. A. Wright, F.C.S., Mr. J. Williams, F.C.S., and Mr. T. B. Groves, F.C.S., for the extraction and investigation of the aconitines of *Aconitum Napellus*, 30*l.*; Mr. M. M. P. Muir, F.C.S., for a second research on oil of sage, 3*l.*

The salary of the editor of the "Year-Book" has been advanced from 100*l.* to 150*l.* per annum.

It was at the Exeter meeting of the Conference in 1869 that the sub-committee appointed to consider the desirability of publishing a "Year-Book of Pharmacy" presented their report; and on the motion of Messrs. Palk and Cooper that the recommendation was adopted. At that date the Conference numbered less than 700 members. After an absence of eight years the Conference has returned to Devonshire. Its membership roll now contains between 2,000 and 3,000 names, and the "Year-Book" occupies a deservedly high position amongst the publications of the year, and is, as it was intended to be, the familiar desk companion of the pharmacist.

It may be remembered that the MS. of the 1876 volume was laid on the table by the editor at the last annual meeting; its issue was, however, unavoidably delayed, mainly in consequence of the illness of the editor and the great pressure on his time, caused by accumulated work and engagements. Some loss of members has doubtless been caused to the Conference by this unfortunate circumstance, but your committee confidently hope that the forthcoming volume will be in the hands of the members considerably before the end of the year; the MS. is now complete, with the exception of the introduction, and the editor, having made arrangements which relieve him of all business engagements, is able to devote his whole time to literary and professional work. Your committee have felt it to be due to the members to make this statement, as much disappointment has been felt by those who were unacquainted, or only partially acquainted, with the circumstances of the case.

In conclusion, your committee would urge members to bring the Conference under the notice of as many of their pharmaceutical friends as possible: the mere mention of the objects aimed at by the Conference, the advantages derived from membership, the intrinsic value of the "Year-Book," and the smallness of the annual subscription, are generally sufficient to ensure a desire for participation, and a willingness to be nominated for election. It should be borne in mind that the Conference must of necessity lose yearly many members from various causes, and that merely to maintain its present strength a considerable number of new names must be added annually.

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### FINANCIAL STATEMENT, 1876–77.

The treasurer (Mr. G. F. SCHACHT) read the financial statement:—

*The General Fund.*

The Senior Hon. Secretary in Account with the British Pharmaceutical Conference.

*Dr.*

| | £ s. d. |
|---|---|
| To Sale of Year-Books by Secretary .. .. .. | 15 0 0 |
| ,, Ditto Publishers .. .. .. | 27 8 4 |
| ,, Advertisements in 1875 vol. .. .. .. .. | 8 15 6 |
| ,, Ditto 1876 vol. .. .. .. .. | 101 6 6 |
| ,, Subscriptions from Members .. .. .. .. | 771 7 4 |
| | 923 17 8 |

*Cr.*

| | £ s. d. | £ s. d. |
|---|---|---|
| By Expenses connected with Year Book— | | |
| Butler & Tanner for Printing, Binding, and Banding .. .. .. .. | 438 19 1 | |
| Editor's Salary .. .. .. .. | 150 0 0 | |
| Messrs. Churchill— | | |
| Commission on Advertisements .. | 27 10 6 | |
| Advertising Year Book .. .. | 2 12 0 | |
| Delivery to Members .. .. .. | 73 0 7 | |
| Foreign Journals (Nutt).. .. .. | 6 12 2 | |
| Ditto (Skeet).. .. .. | 1 1 0 | |
| | | 699 15 4 |
| By General Printing— | | |
| Butler & Tanner .. .. .. .. | 17 4 4 | |
| Stevens & Richardson .. .. .. | 8 4 0 | |
| Parkins & Gotto .. .. .. .. | 2 5 4 | |
| | | 27 13 8 |
| By Directing Circulars and Envelopes .. .. .. | | 6 12 9 |
| ,, Assistant-Secretary's Salary .. .. .. .. | | 40 0 0 |
| ,, Postage (about 12,000 letters) .. .. .. .. | | 48 1 4 |
| ,, Sundries .. .. .. .. .. .. .. | | 8 15 2 |
| ,, Expenses of Meeting at Glasgow .. .. .. | | 24 9 4 |
| ,, Grants in Aid of Research .. .. .. .. | | 60 0 0 |
| ,, Balance Paid to Treasurer .. .. .. .. | | 8 10 1 |
| | | 923 17 8 |

The Hon. Treasurer in Account with the British Pharmaceutical Conference.

| 1876. | *Dr.* | £ | s. | d. |
|---|---|---|---|---|
| | To Balance in Hand on July 1, 1876 .. .. .. | 241 | 16 | 4 |
| July 10. | To Dividend on 200*l.* 3 per cent. Consols .. | 2 | 19 | 3 |
| 1877. | | | | |
| Jan. 10. | To Dividend on 400*l.* 3 per cent. Consols .. | 5 | 18 | 6 |
| June 30. | To Balance of General Fund, 1876-77, received from Dr. Attfield .. .. .. .. | 8 | 10 | 1 |
| | | 259 | 4 | 2 |

| 1876. | *Cr.* | £ | s. | d. |
|---|---|---|---|---|
| Aug. | By Purchase of 200*l.* 3 per cent. Consols at 96⅜, and Brokerage 5*s.* .. .. .. .. .. | 193 | 15 | 0 |
| | By Balance in Hand .. .. .. .. .. | 65 | 9 | 2 |
| | | 259 | 4 | 2 |

| Assets July 1, 1877 | | £ | s. | d. |
|---|---|---|---|---|
| | Cash in Hand .. .. | 65 | 9 | 2 |
| | Consols (stock) .. .. | 400 | 0 | 0 |

## *The Bell and Hills Library Fund.*

The Hon. Treasurer in Account with the British Pharmaceutical Conference for Year ending June 30, 1877.

| 1876-77. | *Dr.* | £ | s. | d. |
|---|---|---|---|---|
| | To Balance in Hand on July 1, 1876 .. .. .. | 5 | 18 | 1 |
| Sept. 1. | To Dividends from four 50*l.* Russian Bonds .. | 4 | 17 | 9 |
| March 1. | " " " .. | 4 | 18 | 3 |
| | | 15 | 14 | 1 |

| 1877. | *Cr.* | £ | s. | d. |
|---|---|---|---|---|
| June. | By Dr. Attfield for Purchase of Books for Plymouth .. .. .. .. .. .. | 10 | 10 | 0 |
| | By Balance in Hand.. .. .. .. .. | 5 | 4 | 1 |
| | | 15 | 14 | 1 |

| Assets July 1, 1877 | | £ | s. | d. |
|---|---|---|---|---|
| | Cash in Hand .. .. | 5 | 4 | 1 |
| | Russian Bonds (stock) .. | 200 | 0 | 0 |

Examined and found correct,

T. DAVISON, Glasgow,
S. B. TURNEY, Plymouth, } *Auditors.*

These reports were adopted. The report of the Bell and Hills Fund was also presented, and in connection with it ten guineas worth of books were presented to the Plymouth Chemists' Association.

Professor ATTFIELD referred to the presentation to the Conference of sixty volumes of Daniel Hanbury's works for distribution to the local associations in the towns visited, and the thanks of the Conference were returned to the donor, Mr. Thos. Hanbury. Mr. T. H. Hills had also sent to the Plymouth local association portraits of William Allen and Jacob Bell.

Mr. CLARKE, on behalf of the local association, acknowledged the gifts.

The PRESIDENT then read his opening address, which was as follows:—

### PRESIDENT'S ADDRESS.

GENTLEMEN,—As you have done me the honour of placing me again in the President's chair it becomes my duty to address you at this stage of our proceedings, and I think I cannot more appropriately commence my address than by referring to the satisfactory evidences of the continued prosperity of our association which are afforded us in the reports which have been read relating to the past year, in the prospect we have of much good matter for the present meeting, and in the indications we receive from various quarters of a desire to co-operate with us in furthering the objects for which we have met here in conference.

One of the objects we desire to promote by these meetings is that of effecting a union of pharmacists for scientific purposes on the broadest basis, and of bringing into close and friendly intercourse not only the scattered members of the body we represent, but those of other associations and of every nationality who have a common interest with us in the advancement of the art of pharmacy. We are endeavouring to effect such advancement by an extension of pharmacological studies and researches among those with whom we are associated, and by encouraging the cultivation of the knowledge which will best enable the druggist to fulfil the duties which the requirements of the public and the medical profession impose upon him. The means which are adopted by this and other kindred associations for effecting these important objects, if they be pursued in unison with each other, as I believe they are being and are likely to be, cannot fail to produce results that will tend to place the practice of pharmacy in the honourable position it deserves to occupy. If at times any of our friends should be ready to falter in their progress, and to fear that we are pursuing a course which may lead them away from the few substantial advantages they possess into the Utopian regions of empty honour, it behoves us to hold out the hand of encouragement, and to endeavour to demonstrate to them that the profit and the honour resulting from our professional occupations will mainly depend on the value of the services we are enabled to render to those who have pressing need of them, and the completeness of the qualifications we possess for the efficient performance of all we undertake to do. The position in which we as pharmacists are placed in the present day is very different from that which our predecessors, the druggists of a century and a half ago, occupied. The druggist of the 17th century has become an extinct species, while the druggist of to-day has been transformed into the apothecary of the 17th century. In the transitions which have thus taken place we may find matter from which to derive profitable instruction. We may also learn from a retrospect of our past history that there has always been in this country an indisposition to legislate in reference to the practice of medicine until the public wants have developed the means of providing what is required and best suited to supply them.

The early history of the practice of medicine in this country is involved in some obscurity, but it appears that both medicine and pharmacy were formerly often associated with the ecclesiastical profession, and that surgery, being of too sanguinary a character to admit of such an association, formed a more natural alliance with the occupation of the barbers.

Medicine, but not surgery, was studied at our universities, but there was no law to define the qualifications of a physician or to regulate the practice of medicine.

Before legislation commenced on these subjects, the surgeons took the lead of the physicians in obtaining recognition from the Government.

About the middle of the fifteenth century a charter of incorporation was granted by Edward IV. to the company of barber-surgeons, who were invested with authority to examine the instruments and remedies employed, and to bring actions against those who practised illegally and ignorantly, none being allowed to practise who had not been previously admitted and judged competent by the master of the company.

An attempt to legislate for the purpose of regulating the practice of medicine had been made as far back as the year 1422, at the instigation of the universities of Oxford and Cambridge, where degrees in physic were granted to those who had studied for the profession; but although an Act passed through Parliament in that year to the effect that "no one shall use the mystery of physic unless he hath studied it in some university, and is at least a bachelor in that science," this Act appears not to have come into operation, for having been referred to the Privy Council for confirmation it was there allowed to drop.

The first successful attempt at legislation was made in 1511. when a law was passed which imposed upon physicians and surgeons practising as such in and around London, and also in the provinces, the necessity of passing an examination, and being approved and admitted, by a body of examiners consisting of the bishop or some other dignitary of the church, with four members of the faculty of medicine.

The College of Physicians was established by Royal Charter in 1518, and four years afterwards, in 1522, a law was passed by which the examination of those allowed to practise as physicians was transferred to the college from the body previously entrusted with the performance of this duty.

Independently of the barber-surgeons there was but one class of recognised medical men, namely, the physicians, who prepared and dispensed the medicines they prescribed. The only class of men who at that time could be properly called apothecaries were the assistants employed by the physicians to prepare their medicines. Some of these assistants from time to time, no doubt, started on their own account, and probably occupied an equivocal position either as doctors or dealers in medicines, for until the year 1511 there had been no law to define the qualifications of a physician, and at that period, and for many years afterwards, there is no evidence of the existence in this country of a body of men engaged on their own account as dispensers of medicines. This, indeed, would necessarily have resulted from the fact that physicians were not then in the habit of writing prescriptions for their patients. The first notice we find of apothecaries engaged in business as such, and probably these were only dealers in compounded medicines, is in the middle of the sixteenth century, when the College of Physicians acquired the power of searching apothecaries' shops, examining their medicines, and destroying such as were found to be unfit for use.

It appears that about this time the surgeons were considered to have exercised the power that had been given them of restricting the practice of their profession to members admitted by their Company too strictly, and without sufficient regard to the requirements of the poor. An Act of Toleration was therefore passed in 1542, which set forth that "the Company and Fellowship of Surgeons of London, minding only their oune lucres, and nothing the profit or ease of the diseased or patient, have sued, troubled, and vexed divers honest persons, as well men as women, whom God hath endued with the knowledge of the nature, kind, and operation of certain herbs, roots, and waters, and the using and ministering of them, to such as have been pained with customable diseases, as women's breasts being sore, a pin and the web in the eye, uncomes of the hands, scaldings, burnings, sore mouths, the stone, stranguery, saucelin and morphem, and such other like diseases. . . . And yet the said persons have not taken anything for their pains and cunning. . . . In consideration whereof, and for the ease, comfort, succour, help, relief, and health of the King's poor subjects, inhabitants of this his realm, now pained or diseased, be it ordained, etc., that at all time from henceforth it shall be lawful to every person, being the King's subject, having knowledge and experience of the nature of herbs, roots, and waters, etc., to use and minister them according to their cunning, experience, and knowledge . . . the aforesaid statute (the Act of 1511) or any other Act notwithstanding."

This Act was intended for the relief and toleration of those who, although not legally qualified medical men, yet, possessing some knowledge of medicines, administered them gratuitously. The previously existing law was still allowed to take its course against notorious quacks and ignorant pretenders, many of whom were punished by fine, and sometimes by exposure in the pillory.

As yet we have no knowledge of druggists as a recognised class of traders. Crude drugs were mostly supplied by grocers, who dealt in foreign drugs as well as grocery, and by herbalists and simplers who collected indigenous medicinal plants. Those grocers who gave most attention to, and were best acquainted with, drugs, became drug-grocers, and these, assuming the title of druggists, confined themselves to this class of merchandise. The physicians, purchasing the crude drugs from such sources, not only dispensed, but also prepared and compounded such medicines as they administered to their patients. But this practice was felt to be irksome and unsuited for members of a learned profession; therefore, in the early part of the seventeenth century, physicians were getting into the habit of issuing prescriptions, or "bills" as they were then called, which necessarily caused the establishment of dispensing apothecaries, the number of whom must have increased as this new practice extended.

Until the year 1618 there had been no authorised Pharmacopœia, and indeed such a work could not have been required while physicians were their own apothecaries, but when prescribing and dispensing became distinct and independent occupations it was necessary to have a recognised and authoritative standard by which to determine the meaning and value of the terms employed in extemporaneous prescriptions. Hitherto the medicines used belonged principally to the class called galenical, for which complicated formulæ had been handed down from generation to generation for centuries, without any attempt having been made to improve or alter them. But with the sixteenth century a new class of remedies was introduced, which, in spite of much opposition, acquired and maintained a position which was daily increasing in importance, and to the more extended use of this class of chemical agents in medicine may in part be ascribed the necessity which arose for a class of men trained and exclusively devoted to the practice of pharmacy, including the preparation of chemical and galenical medicines.

Pharmacy was now for the first time assuming an independent position in this country, but circumstances which followed this result contributed more to the production of a new form of medical practice than to the maintenance and improvement of pharmacy as an independent art. In 1606 the apothecaries, then few in number, formed an alliance and became incorporated with the grocers, but this alliance was shortly afterwards dissolved, and in 1617 the Apothecaries' Company was formed, for which a charter was obtained giving them some exclusive privileges. They established a dispensary near Blackfriars Bridge in 1623, for the preparation of some of the more important medicines then in use, and to this was subsequently added a chemical laboratory in 1671. The medicines prepared or manufactured at this establishment were only supplied to members of the company for use in their practice. The establishment still exists under the title of Apothecaries' Hall, but important changes have been made in the character of the institution and the purposes to which it is applied.

At the time of the formation of the Apothecaries' Company the number of its members was 114, and that this number included all the then established apothecaries may be inferred from the fact that a few druggists or drug-grocers were included in the Company to make up the number to that of the physicians practising in London.

The apothecaries were a prosperous body, and probably this was to no inconsiderable extent due to the incidence of their advent at a time when wealth and luxury, pestilence and poverty were providing a rich harvest for doctors of all degrees, while the law had only provided doctors of one, and that the highest degree. Oxford and Cambridge had furnished London with 114 physicians, learned in all the science and mystery of 'physic as then taught at the Universities, but London, with its densely packed and increasing population, with its undrained streets and festering cesspools, seemed to require something more than this to stay the ravages of plague and other forms of pestilence. The apothecaries had been trained in a school in which medicine and pharmacy, dispensing and prescribing, went hand in hand, and it need not be matter of surprise that with so many demands for medical advice for the poor, and for those who could ill afford to pay a physician, they were easily induced to apply such knowledge as they possessed in ministering to the relief of the sick without too nicely considering the extent of their qualifications for doing so. It is a significant fact, that although prosecutions were frequently instituted against ignorant quacks, and although the College of Physicians took proceedings against members of the College of Surgeons for prescribing in other than surgical cases, and successfully prevented such practice, yet for a century or more the apothecaries were permitted to pursue an illegal practice, which commenced with the treatment of trifling ailments, but grew by degrees, and was supported by public opinion, until it not only rivalled, but surpassed in extent, the practice of legally qualified physicians. The result of this was that in less than a hundred years the number of apothecaries increased from 114 to nearly 1,000, and notwithstanding the many and strong protests which were made by some of the physicians against the encroachments of apothecaries upon their legitimate functions, this was of no avail so long as there was a great public want that was not otherwise provided for than by allowing the members of a lower grade of the profession to overstep the strict limit of their duties.

It was in the seventeenth century that druggists, as distinguished from grocers, came into existence and assumed a recognised position among traders. To the title of druggist they afterwards added that of chemist when chemical medicines came into more general use, but the chemist and druggist was at first and for some time, with perhaps a few exceptions, a mere dealer in drugs and chemicals, without possessing or pretending to possess the knowledge required for their preparation or production, and as yet they had nothing to do with the dispensing of medicines prescribed by the physicians.

It was not until the middle of the last century that chemists and druggists undertook the duty of dispensing medicines, and they were called to the performance of this duty in consequence of the apothecaries having relinquished the position they had originally occupied and usurped the functions of medical men.

The transference of the dispensing of physicians' prescriptions, however, was not made directly from the apothecary to the chemist and druggist. There was an intermediate period during which much of the dispensing in London was done at institutions called dispensaries, which had been established by the physicians, ostensibly to enable the poorer classes to get prescribed and other medicines at a moderate cost. These dispensaries, of which there were three, were established in 1697, by subscription from the fellows and members of the College of Physicians. The principal establishment was in Warwick Lane, Newgate Street, at the Hall of the College of Physicians, where medicines were not only dispensed but prepared for use in dispensing at the other establishments in St. Martin's Lane, Westminster, and St. Peter's Alley, Cornhill.

The physicians justified the establishment of those dispensaries, on the ground that while they were in the habit of prescribing gratuitously for the poor their patients had no means of getting the prescriptions prepared without taking them to an apothecary, who was often in such cases not only ready to replace the prescriber, but accustomed to make unnecessarily high charges for the medicines supplied.

A very acrimonious controversy took place between the physicians and apothecaries respecting these dispensaries, and they were at length given up when the druggists undertook the duty of dispensing, for which they had been preparing themselves.

There is reason to believe that the physicians' dispensaries, while they existed, were the schools at which instruction was principally acquired by those who were intending to establish themselves as dispensing chemists and druggists. By the middle of the last century the dispensaries had disappeared, and soon afterwards chemists and druggists began to display the notice, "Physicians' prescriptions carefully prepared."

We thus arrive at the distribution of medical and pharmaceutical duties, such as exist at the present time; and it will be seen that the arrangements adopted when druggists took the position previously occupied by the apothecaries resulted from the growing wants of the public, which were not otherwise provided for. Legislation has followed our medical and pharmaceutical institutions with slow and reluctant steps, and has been chiefly directed to the remedy or prevention of evils when these have appeared and have grown into serious abuses. At the time when druggists became dispensers of medicines no adequate provision had been made by the Legislature for the medical treatment of all classes of the population. Colleges of physicians and surgeons had been established, with powers which, if they had been exercised to their fullest extent, would have left a large proportion of the people without even the consolation of having their ailments ministered to by those who, although not possessing the highest medical knowledge, were the only medical advisers their means enabled them to consult. The apothecary—without any specified or required qualifications for such a duty—had become the poor man's doctor; and public opinion and the liberality and good sense of the heads of the medical profession enabled him to maintain that position until better arrangements were made.

The regulations adopted in other countries present a marked contrast with such as have existed here. From early periods, dating back to the twelfth and thirteenth centuries, we may trace the recognition of pharmacy as a distinct and separate branch of the medical profession in continental countries. In France and Germany apothecaries' shops existed in most of the large cities in the thirteenth, fourteenth, and fifteenth centuries, and these were sometimes kept up at the public expense, with botanic gardens attached to them. The number of these establishments greatly increased in the fifteenth and sixteenth centuries, when they were placed under strict regulations. Laws were passed for regulating the practice of pharmacy in France in the early part of the sixteenth century, and on several occasions throughout that century. The tendency of legislation in France, Germany, and Italy was to effect and maintain a complete separation between the treatment of disease and the preparation and dispensing of medicines. The law defined and limited the nature of the occupations, in the critical direction, which practitioners of pharmacy were allowed to engage in, and a sense of emulation stimulated the members of the body thus circumscribed in their pursuits to the attainment of the qualifications required for the discharge of the duties assigned to them. It was never a question with them whether they should become general practitioners of medicine; if it had been pharmacy and the shop would have gradually sunk in their estimation while they were seeking to attain to a higher grade in the profession of medicine. But, tied as they were to the plain and legitimate duties connected with the preparation and dispensing of medicines, the only direction in which they could hope to elevate their social and professional position was that of increasing their professional qualifications. Long before pharmacy had emerged in this country from the condition in which it was represented by the physicians' assistants, there was a class of independent apothecaries or pharmaciens in Paris who were supporting a school for the special instruction of those who were intending to devote themselves to this occupation. In the year 1576 this school was founded by a public-spirited pharmacist, Nicholas Houel, who deserves to be canonised among pharmaceutical worthies. The Paris School of Pharmacy afterwards received the support of the corporation of apothecaries, and ultimately became the College of Pharmacy, in which so many distinguished pharmaciens have been trained.

By these and similar means, adopted not only in France, but also in other continental countries, the practice of pharmacy being strictly defined and limited to the exercise of functions for which its followers were especially and well qualified, has assumed the character of a profession, the members of which fill an important position in the social scale.

If we now return to our own country, and to the middle of the eighteenth century, we find laws existing for regulating the qualifications of physicians and surgeons and for restricting medical and surgical practice to examined and approved members of those branches of the profession. We also find a Society of Apothecaries with a charter authorising them to prepare, dispense, sell, and administer medicines. These apothecaries, having been originally the servants, were now the attendants of the physicians, whose duty it was, if called in with a physician, to carry his instructions into effect, not only preparing and sometimes administering the prescribed medicines, but performing operations that are now left to the nurse. To a certain extent, the apothecary was supposed to be, and generally was, an educated man, that is to say, he had served an apprenticeship to one of the same class, and, being intimately associated with the physicians, he had frequent opportunities of observing how they treated their patients, especially as the prescriptions, or "bills" as they were called, all passed through his hands. Pope, in his "Essay on Criticism," which was written in the early part of last century, says:—

> So modern "pothecaries," taught the art
> By doctors' bills to play the doctors' part;
> Bold in the practice of mistaken rules,
> Prescribe, apply, and call their masters fools.

But not unfrequently the apothecary was called in without the physician, and then he usurped the functions of both, for which, however, his education had not properly qualified him, for he had not necessarily received a systematic and scientific education, nor had he passed any examination. This was a subject of complaint between the physician and apothecary, which for a century or more had been growing stronger and louder. As a natural consequence physicians ceased to advocate the calling in of an apothecary, and transferred their patronage to the rising and rapidly increasing class of chemists and druggists. We find this class of recently introduced compounders and dispensers of medicines taking zealously to their new occupation, and apparently thriving, as the apothecaries had done when they first started on their career. They were good men of business, but had no pretensions to much education of any sort, and they were not even required, as the apothecaries were by their charter, to have served an apprenticeship to one who practised the same art.

The rise and progress of dispensing chemists and druggists caused, as might have been expected, a falling off in the prosperity of the apothecaries, and complaints soon began to be made on this account.

In 1748 an Act was passed which extended the powers given to the Society of Apothecaries by their charter, and enabled them to examine and grant licenses to those who were authorised to act as apothecaries in and within seven miles of London. It was through the power supposed to have been given to them by this Act that they endeavoured some years afterwards to prevent druggists not only from dispensing the medicines prescribed by physicians, but also from selling any compounded medicine. It is probable that, strictly speaking, they had legally acquired a monopoly in these respects, but when it was known how they intended to apply the power they had acquired, it soon became evident that the public and the higher branches of the medical profession would not support them in maintaining such a position.

It was not until the end of last century that any active steps were taken with the view of contesting the right of chemists and druggists to prepare, compound, dispense, and sell medicines. In 1793 an association of apothecaries was formed, for the purpose of investigating the causes of the diminished prosperity which was complained of among their fraternity, and which was ascribed to two principal causes.

"First, the encroachment which chemists and druggists have, of late years, made on the profession of the apothecary, by vending pharmaceutical preparations, and compounding the prescriptions of physicians."

"Secondly, the want of a competent jurisdiction in the profession itself, to regulate its practice and to restrain ignorant and unqualified persons from practising at all."

A committee of twenty members was appointed, who met once a month at the Buffalo Tavern, in Bloomsbury Square, and by means of an extensive correspondence with apothecaries throughout the kingdom they obtained a vast amount of statistical and other information, which was published in their reports, and a detailed account of which is given by Mr. Bell, in his "Historical Sketch of Pharmacy." It was ascertained as the result of the inquiry that druggists were springing up in every part of the country, and in some places with a fourfold increase in ten or twelve years, that they undertook the dispensing of prescriptions and the sale of medicines of all sorts, and were in the frequent habit of prescribing for those who applied to them for advice. Evidence was adduced to show that many of these druggists were ignorant of the meaning of terms used in prescriptions, and of the qualities and effects of the drugs they were dealing in, but the evidence went also to show that not a few of those who practised as apothecaries were equally ignorant, and that even the power given to the Society of Apothecaries by the Act of 1748 to grant licenses on examination was only partially and very imperfectly applied. The final result of the committee's labour was that addresses embodying these facts and suggesting a system of reform were presented to the Colleges of Physicians and Surgeons and the Society of Apothecaries, after which a petition was presented to the House of Commons, and there the matter ended.

The physicians and surgeons had taken no part in this contest between the apothecaries and chemists and druggists. Even the Society of Apothecaries in their corporate capacity appear to have held themselves aloof. All the parties interested, and still more those who were disinterested, must have seen that the contention had reference to private gain more than the public good. Yet there can be no doubt that great advantage resulted from the searching inquiry that was made into the merits and demerits of the opposing candidates for public favour. Public opinion had given to the apothecaries, or at least had called them into, a position which was by no means an unimportant one, but it obviously involved the relinquishment of that which they had previously held, and which was now being handed over to the chemists and druggists. Neither party were as yet qualified for the duties they were undertaking, and of this, if they were not themselves previously sensible, they must have been rendered so by the discussions which took place on the subject. The contest was comparatively a short and harmless one, and being over, each party no doubt retired with the wise determination to set his own house in order before he again complained of his neighbour's. Such a resolution, if carried into effect, must have tended to strengthen the chemists in their position, for the better qualified their adversaries became for medical practice, at which they were aiming, the less fitted they must necessarily have become for the duties of dispensing. On the other hand, a large number of chemists and druggists, including the founders of many pharmaceutical establishments in London and various parts of the country, which have acquired and sustained high reputations, devoted themselves to the carrying out of the most approved methods of preparing and dispensing medicines, which secured to them extensive patronage, and enabled them effectually to silence any further attempts at an outcry, such as was previously raised by the apothecaries on account of the assumed encroachment of chemists on their privileges.

A period of eighteen years now elapsed before any further steps were taken to legislate on medical affairs; but in 1813 an association of apothecaries, not the Society of Apothecaries, again appeared in the field, and introduced a bill into Parliament, which proposed to create a licensing board, consisting principally of apothecaries, with a few physicians and surgeons, who were to have the power of licensing not only apothecaries, but chemists and druggists also, although the latter were not to be represented in, and were to have no voice in the election of, the board. This bill was immediately opposed by the chemists, and as it met with little favour either in or out of the profession, it was soon withdrawn.

Two years afterwards the Society of Apothecaries took up the subject of legislation and carried the Apothecaries Act of 1815, by which the practice of apothecaries has been since regulated. If we may judge from the statements of the authors of this bill and their representatives, the measure was not intended to interfere in any way with the then established and admitted practices of chemists and druggists in preparing, dispensing and selling medicines. The committee of chemists and druggists, however, who were appointed to watch the progress of the measure, influenced, perhaps, by the attempt which had previously been made, on the strength of the then existing law, to prevent any but apothecaries from dispensing prescriptions, insisted on having a clause introduced into the bill which should not only in general terms exempt chemists and druggists from its operation, but should specify the acts for which such exemption was granted. In the clause as it stands in the Act the words, "in the buying, preparing, compounding, dispensing, and vending drugs and medicinal compounds, wholesale and retail," were introduced at the suggestion, and by the desire of the committee, acting under the advice of counsel. In fact, everything that was asked for by the committee was granted, and the bill passed without further opposition.

By this Act the original charter granted to the Society of Apothecaries by King James I. in 1617 was confirmed, except that the jurisdiction of the Society, which by the charter had been limited to London and its environs, was now extended to England and Wales, and fresh powers were given to them to examine candidates and grant certificates to such as were qualified to practise as apothecaries or to act as assistants to apothecaries. The Act having recited that "whereas it is the duty of every person using or exercising the art and mystery of an apothecary, to prepare with exactness and to dispense such medicines as may be directed for the sick by any physician lawfully licensed by the president and commonalty of the Faculty of Physic of London, or by either of the Universities of Oxford or Cambridge," proceeds to enact that every apothecary shall be subject to a penalty if he refuse to make, mix, dispense, supply, or sell any medicines so prescribed by a physician, or if he negligently, falsely, or fraudulently prepare and sell such medicines. These, however, were mere confirmations of what had previously been considered to be the duties of an apothecary as defined in their Charter and in the Act of 1748. The important feature of the Act of 1815 is contained in the fourteenth clause, which specifies that no person thereafter, except those previously practising, shall be authorised to practise as an apothecary in England or Wales, unless he has been examined and has proved his skill and ability in the science and practice of medicine, and his fitness and qualifications to practise as an apothecary. This gave to the apothecaries, by legal enactment, what they had previously assumed in opposition to many protests from physicians, namely, the right to practise medicine. The clause in the Act which exempts chemists and druggists from its operation as far as relates to "the buying, preparing, compounding, dispensing, and vending drugs, medicines, and medicinable compounds," established the right which they had also previously assumed in opposition to many protests from apothecaries, but it had become more important to have this right clearly defined, as now for the first time there were heavy penalties imposed on those who infringed the privileges of the apothecaries.

Under this Act the apothecaries entered upon a new career, and although it was some time before any marked change was observed in the general character of this part of the profession, yet gradually they have become more highly qualified for their professional duties, and being now merged in the great body of medical practitioners, they occupy an important and honourable position among those to whom all medical and sanitary affairs are entrusted. Their weak point, no doubt, is materia medica and pharmacy, which might be advantageously relinquished by those who practise medicine if the habits and requirements, not to say the necessities, of the public would admit of it.

A long interval was allowed to elapse after the passing of the Apothecaries Act before any measures having a similar object were adopted for regulating the qualifications of chemists and druggists. What has since been done by the Pharmaceutical Society is too well known and appreciated by those I am addressing to require comment here. A distribution of medical and pharmaceutical duties had been gradually effected to meet the exigencies of a great mixed population, and to the extent to which these have been established by law the public are provided with the means of having their medical wants supplied by men well-qualified in their several departments.

We represent one of these departments, in connection with which we are endeavouring to raise the standard of professional proficiency by promoting scientific research in those branches of knowledge which relate to the preparation of medicines. This is the object for which we have met, and I feel assured that the matter which will be submitted for our consideration, and the discussion relating to it, will show that we are following out our own proper subjects and advancing their scientific and practical study in a way best calculated to make the practice of pharmacy at once honourable and useful to those who are engaged or interested in its pursuit.

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Mr. A. P. Balkwill (Plymouth) proposed a vote of thanks to the president for this address. He regarded such a retrospect as eminently useful. It would be very helpful to pharmacists to have a clear idea of their past history to aid them in their future course, for what had they to guide them in the future but the record of the past? The trade of the chemist and druggist is now in a transition condition, and for that reason it was most valuable to have the experience of the past in somewhat analogous circumstances. Division of labour was the characteristic of the work of the present day, and the speaker regarded with thankfulness the conditions which separated the work of the pharmacist from that of the physician. He, however, urged that there was an important field of labour open for those pharmacists who had leisure, not only by working in their laboratories, but likewise by study in the laboratory of the human system, or, in other words, in the scientific prosecution of physiological chemistry and therapeutics.

Mr. E. Smith (Torquay) seconded the motion, remarking that, the president's name having been familiar to pharmacists for one or two generations, it was not unreasonable to form high expectations from his ripe experience, and he was sure the manner in which this vote would be received would indicate that these anticipations were fully realised.

The vote was carried with great cordiality.

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The reading of the papers was then commenced by a

### Report on the Extraction and Investigation of Aconitines.

*By Dr. Wright, J. Williams, and T. B. Groves.*

This report was very lengthy, and was not read in full, but Dr. Wright gave the chief points. He said that, although the inquiry was not yet complete, several interesting points had been arrived at. In the first place he said aconitine from *A. Napellus* was found on analysis to have the composition $C_{33}H_{43}NO_{12}$. By the action of hot water, alkalies, and some acids, this substance, first assimilating one molecule of water ($H_2O$), can be split up into benzoic acid ($C_7H_6O_2$), and another substance which had been named aconine ($C_{26}H_{39}NO_{11}$). He therefore regarded aconitine as a benzoyl-aconine. Aconine itself was an inert substance, with a slightly bitter taste, but giving no tingling effect. Pseud-aconitine (the alkaloid from *A. ferox*) can be split up in a similar manner, but with materially different results, the products being what was called pseud-aconine and the substance known under the attractive name of diamethyl-protocatechuic acid.

It had also been found that *A. Napellus* and *A. ferox* yielded both aconitine and pseud-aconitine, though in respectively various proportions. This accounted for the fact which had also been discovered by the committee, that commercial aconitine always contained aconitine and pseud-aconitine.

Dr. Paul then gave a report of results arrived at by himself and Mr. Kingzett after an examination of some Japanese aconite root which had been recently placed in their hands. They were not aware of the botanical origin of this aconite, but probably Mr. Holmes could tell the Conference more of that. They had worked on 8½ lbs. of the root, and had extracted by means of benzoline a crystallisable substance in much larger proportion than was usually assigned to aconite, theirs being about 13 or 14 grains to the pound. Dr. Paul then proceeded to criticise the various analyses of aconitine which had been announced, and which, he showed, considerably varied. His general conclusion was that the so-called alkaloids were compounds of aconitic acid with various bases.

Dr. Redwood said that the gentlemen who had been engaged on this difficult subject were thoroughly able, and they had brought forward some points of pharmaceutical interest. He said we had been accustomed to look to the extraction of the alkaloids of medicinal plants as affording the best security of pharmaceutical uniformity. He felt that the results which had been brought forward would rather tend to weaken this confidence. That a body of such deadly character was liable by the process of manufacture to be split up into inert substances was a serious consideration. Medical men had been long aware of the inertness of some samples of aconitine. He had heard from the late Mr. Morson, a manufacturer of aconitine, that a certain medical man of his acquaintance, on seeing aconitine of foreign make, would apply some to his tongue with his finger. Dr. Redwood thought some consolation could be obtained from the fact that aconitine was generally employed only for external application.

Mr. Holmes thought it was certain that the Japanese aconite was not *A. Napellus*. He remarked on the importance, as shown by Dr. Wright's paper, of deciding on and assuring the supply of some definite species of aconite.

Mr. Greenish had examined some of the Japanese aconite roots microscopically. These, like all other samples of aconite from every source whatever, he had found mixed. The variations of samples of Japanese aconite were possibly due to different ages of the roots. He at least believed from its botanical characters that the Japanese aconite was not derived from *A. Napellus*.

Mr. Umney would like to elicit an opinion as to which is the most effective aconite for medical use. His own impression was that the Nepaul aconite was the most powerful, but the millmen complained very largely of the irritation produced by the Japanese aconite.

Mr. Greenish said this might arise from the larger proportion of starch contained in the latter.

Mr. Gerrard had also found that Japanese aconite yielded a much larger proportion of alkaloid. This kind of aconite, he said, had an extremely irritating effect. In using it, it was necessary to protect the face and hands.

Professor Attfield said if the condition of our acquaintance with the aconite alkaloids was now foggy, it might be said that our former knowledge of them was chaos. He had no doubt that the light which the luminous constellation now engaged in their investigation would ultimately throw upon the subject would enable us to make aconitine and the galenical preparations of aconite with more reliability. He would like Dr. Wright to say if he wished the grant from the Conference in advancement of this subject to be continued. Of the 50*l*. granted only 30*l*. had been drawn.

Mr. Kingzett criticised the chemical formulæ and the conclusions given by Dr. Wright.

Dr. Wright, in reply, regretted that the authors of the second paper on aconitines had not communicated their intention of investigating the subject to one of the committee engaged on it, as they would have thereby been preserved from some errors. He thought their product was the compound of aconitine and pseud-aconitine referred to in the report In reply to Professor Attfield's question, he considered the remaining 20*l*. might be spent with advantage in promoting this inquiry. If it were not granted, however, he should finish up the material still in his possession. He had not made experiments on the toxic effect of these alkaloids. He did not possess a vivisection license, but Professor Foster of Cambridge would undertake such experiments. He added that in his opinion the preparations of the root now used were not reliable, for the double reason that they were liable to depreciation, and that the roots themselves varied.

Some further discussion took place respecting the chemical formulæ between Dr. Wright, Mr. Kingzett, and Dr. Paul, their opposed opinions being maintained with equal confidence.

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Before adjourning for luncheon, Professor Attfield announced that a paper had been sent in by Mr. Atkins, of Salisbury, on "The Relations of Pharmacists to the Medical Profession." It was not down on the programme, because it had been considered that though a paper on pharmaceutical ethics was quite admissible, the discussion on pharmaceutical politics which would probably follow this paper was not suitable. It had been suggested that the paper should be read, but not discussed, and on this proposal being put to the Conference it was unanimously agreed to.

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The following paper was read by Professor Attfield:—

### The Active Principle of Cayenne Pepper.

*By J. C. Thresh, Buxton.*

In November last the author received from Messrs. Hopkins & Williams 8½ lbs. of alcoholic extract of cayenne, the produce from 30 lbs. of fruit. From this, by treatment with benzine, 2¼ lbs. of fat were obtained. On treating this with hot petroleum, and setting aside the solution for some time, a quantity of an impure fatty acid was obtained, exhibiting the properties of palmitic acid. From the petroleum solution the capsaicin was removed by rectified spirits, but only from 3 to 4 drams of the slightly impure principle was obtained. By crystallisation from ether, large crystals of perfectly pure capsaicin were obtained.

Burnt with lead chromate, ·356 grammes gave ·9105 $CO_2$ and ·2995 $H_2O$; ·381 grammes gave ·9745 $CO_2$ and ·318 $H_2O$.

These results agreed closely with the formula $C_6H_{14}O_2$, obtained by Dr. Buri from a sample of capsaicin prepared by the author from Natal pepper.

The very small proportion of really pure principle obtainable by the process adopted rendered it impossible to carry the investigation much further. The products of its oxidation by nitric acid were oxalic and succinic acids, an unexamined crystalline acid, and an oily substance.

The colouring matter of cayenne pepper was also isolated by treating cayenne (which had been previously exhausted with alcohol) with benzine and evaporating. A deep orange red oily liquid is obtained, almost insoluble in alcohol, very soluble in chloroform, ether, amyl alcohol, benzine, carbon bisulphide, fixed and volatile oils. It is also readily soluble in an alcoholic solution of castor oil or palmitic acid.

Mr. **Williams** wished to state that the extract which Mr. Thresh said he had received from Messrs. Hopkins & Williams had been prepared by Messrs. Wright & Umney.

Mr. **Greenish** asked which capsicum had been used—that from Natal or that from Nepaul?

Mr. **Umney** said the ordinary chillies had been used, not the large variety from India.

Mr. **Gerrard** said that in accordance with a request from Mr. Thresh he had asked Dr. Ringer to make therapeutical trial of the capsaicin, and he had administered some in doses of the $\frac{1}{32}$ of a grain, but it had such a violent griping effect, accompanied with a purgative action, that its use as a remedy had been abandoned.

Professor **Redwood** said it was important to observe the difference between capsicin and capsaicin. Evidently the latter preparation was too powerful as a medicine, and, except that it was desirable to know as much as possible about the proximate principles of substances employed in medicine, he did not exactly see that any practical good was likely to result from further inquiry into this alkaloid, which, it appeared, was somewhat costly to produce. He mentioned that the ordinary oleo-resin capsicin, with common salt, coloured, if necessary, with annatto, was used by chemists in some parts of the country to produce the so-called soluble cayenne pepper.

In reply to Mr. Groves, Mr. **Gerrard** said that the capsaicin dissolved in glycerine and alcohol had been applied externally. It caused redness, but did not blister.

Dr. **Attfield** also read the following paper, though not in full:—

## ESSENTIAL OILS, WITH SPECIAL REFERENCE TO THE HYDROCARBONS CONTAINED IN THEM.

*By W. A. Tilden, D.Sc., Clifton.*

This was a long report of an investigation into the characteristics of various terpenes, after a process devised by the author, which consists in passing nitrosyl chloride gas (NOCl) into the terpene either pure or diluted with chloroform or alcohol, and cooled to – 10° C. A white crystalline body is deposited, which is found to be a compound of one molecule of terpene and one molecule of nitrosyl chloride. Its formula is therefore always $C_{10}H_{16}NOCl$, and it is to be observed that this result only occurs with terpenes of the formula $C_{10}H_{16}$. The polymeric hydrocarbons do not yield the reaction.

From the compound named, HCl is removed and nitroso compounds are left, having special characters and crystalline forms, which serve to distinguish the terpenes from each other. French and American turpentines yielded nitroso derivatives which agree in solubility and melting point, but the crystals of which are readily distinguishable. The terpenes of juniper and sage oils yield compounds similar to that from French turpentine, and the author regards these terpenes as allotropic.

Experiments with oil of savin convince the author that this oil has not, as has generally been said, the same composition as oil of turpentine; its terpene has not the same formula. By repeated fractional distillation of the oil a liquid was obtained—not more than 5 per cent. of the whole—which turned out to be not a terpene, but to contain oxygen, and to be isomeric with ordinary camphor. Lavender oil, too, the author concludes to be a mixture of liquid camphors. The terpenes of oil of caraway, sweet orange peel, bergamot, and lemon, Dr. Tilden believes to be identical; but the last-named he found a more complicated oil than the others. Whether it is so naturally, or whether his sample was adulterated, was not quite clear. It is often said that essence of lemon becomes converted into oil of turpentine after standing. Dr. Tilden would like to receive samples and details of any reliable instance of such conversion.

Mr. **Umney** said he thought some of the physical properties of certain oils were likely to vary according to the sources from which they were derived. Oil of caraway, for instance, was prepared indiscriminately from Dutch and Mogador caraways.

Mr. **Schacht** believed that Dr. Tilden's observations of the physical properties, such as the effects on the polariscope, &c., were obtained from the hydrocarbons extracted from the oils, not from the oils themselves.

Mr. **Groves** said it would be very useful if some one could tell how to prevent the change in flavour which was noticeable in some oils on keeping.

Dr. **Wright** said he knew that some perfumers adopted the plan of keeping their oils in tightly stoppered bottles, and filling up with water as any of the oil was removed.

Mr. **Schacht** thought it was a curious fact, seeing that Dr. Tilden had noted that the aromatic principle itself contained oxygen, that a further oxidation should spoil the aroma.

Mr. **Atkins** said he had kept different portions of the same sample, the one in his cellar, the other on the shelf of the shop, in similar stoppered bottles, and had found the latter spoil, while the former remained perfectly sweet. This he had tried with the oils of rosemary and lemon. He believed the action of gas was very injurious to essential oils.

Professor **Attfield**, in introducing the next paper, of which he read an abstract, said it was excessively chemical, and though no one would suspect him of discouraging original research after any kind of truth, yet he certainly did not see exactly what pharmaceutical results would accrue from such researches as these. Especially now that the Royal and Chemical Societies had funds at their disposal, he thought such work as this might be left to them (applause). The Pharmaceutical Conference had the honour of having initiated such investigations. He might add that Dr. Tilden was also of this opinion, and would not apply to the Conference for a renewal of the grant.

## ON ESSENTIAL OIL OF SAGE.

### PART II.

*By M. M. Pattison Muir, F.R.S.E., Assistant Lecturer on Chemistry, and S. Siguira, Chemical Student in the Owens College, Manchester.*

In this paper the properties of the two terpenes obtained from sage oil were detailed. The lower boiling terpene was almost certainly identical with the terpene obtained from French turpentine oil. The terpene of higher boiling point most probably contained traces of a hydrocarbon belonging to the $C_{15}H_{24}$ group. Both terpenes contained small quantities of cymene: when freed from this body neither yielded terephthalic acid on oxidation. Analyses and vapour density determinations of the oxidised liquid constituent of sage oil (salviol) led to the formula $C_{10}H_{16}O$ as expressing the composition and molecular weight of this substance. Sage camphor is also shown to have the same formula, but is isomeric, not identical, with ordinary camphor.

## THE CONSTITUENTS OF IVY BERRIES.—"HEDERIC ACID."

*By Robert H. Davies, F.C.S., 17 Bloomsbury Square.*

So-called "hederic acid," having been obtained in a pure condition, was submitted to ultimate analysis, and as the result of five analyses, Mr. Davies deduced the formula $C_{16}H_{26}O_4$.

Hederic acid did not seem to produce salts; in fact, it was not an acid at all, though this name had better be retained, Mr. Davies thought, until some further information regarding its constitution was obtained.

A nitro substitution product has been obtained which has the formula $C_{10}H_{25}(NO_2)O_4$.

A lead compound and a bromo substitution product had also been formed, but were not yet analysed.

The destructive distillation of this hederic acid gave rise to fatty substances which distilled over, and an inflammable gas, which escaped. Results, chemically interesting, were expected from an examination of these fatty substances.

Professor **Attfield** read the next paper, the opening sentence of which, that "the price of quinine was now abnormally high," secured general assent.

## ON THE SUPPLY OF CINCHONA BARK AS CONNECTED WITH THE PRESENT PRICE OF QUININE.

*By John Eliot Howard, F.R.S., Stratford.*

The author of this paper dwelt upon the present high price of quinine, and discussed the causes which have led to it. It appears that the war, which has told with lamentable effect on the Columbian districts of South America, has entirely deranged the collection of bark in those quarters which have usually yielded to the quinine manufacturers the bulk of their raw material. Hence had arisen a dearth in the supply which would have amounted to an actual famine but for the imports from the cinchona plantations of India. The planters have consequently realised large sums of money, the Ootacamund plantation alone yielding the Indian Government as much as 35,000*l*. This state of prosperity Mr. Howard believed to be of a transient nature, except in those cases where scientific knowledge was combined with practical skill in cultivation. The leading species of cinchona improve by cultivation, but the inferior sorts will scarcely pay for planting and care when the reaction from present high prices had fully set in, as it certainly would, according to Mr. Howard's view, at a more or less distant future.

As regards the medical value and probable price of the (so-called) inferior alkaloids, Mr. Howard thought that cinchonidine, from its very abundant production in nature, and especially in the now much cultivated *C. succirubra*, was likely to remain at a low price compared with quinine. Both this alkaloid and quinidine would probably be found in many cases superior even to quinine. Cinchonine, Mr. Howard considered, would never be so valuable as either of these, and the other (mostly uncrystallisable) alkaloids were of even less worth. One of the latter he suspected of emetic properties. He thought that all these questions should be settled by competent authority. He was of opinion that planters need not fear their labours being superseded by the production of artificial quinine.

Mr. Howard concluded with some botanical observations on the different species of cinchona.

Dr. Redwood said this paper was from a gentleman who had devoted more attention to, and had more successfully studied, the cinchonas than perhaps anyone living. His suggestions and opinions were therefore entitled to the greatest respect.

Dr. Attfield said it seemed astounding to him that, after the numerous experiments and favourable reports by the Indian medical officials and others, the alkaloids other than quinine were not in more general use. He thought it was a practical point which might result from this Conference if the pharmacists present from various parts of the country would set to work to bring these alkaloids and their merits more under the notice of medical men. Substances with all sorts of fanciful names got into extensive use by the usual processes of advertising and pushing, and it had occurred to him that if Messrs. Howards would condescend to use similar methods they might get cinchonidine into more general use.

Mr. Willmott (King's College Hospital) said the difficulty was exceedingly great of inducing medical men to try these other alkaloids. When they were shown to them they shook their heads. Messrs. Howards had sent to King's College Hospital a bottle of citrate of iron and cinchonidine, but the substance remained unused.

Dr. Symes (Liverpool) said Messrs. Howards had issued a circular giving medical opinions in favour of cinchonidine. He himself had been successful in several instances in introducing it into medical practice in Liverpool.

Dr. Paul said the sulphate of cinchonidine which both Messrs. Howards and Mr. Whiffen had endeavoured to introduce was to be had at about 2*s.* or 3*s.* per ounce, and it had not the objection to which the amorphous quinine was open, of an excessively disagreeable taste. He thought if some medical authority, such as the College of Physicians, would call attention to its merits there would be a better prospect of its employment. It was now looked upon as a sort of adulteration.

Mr. Benger had tried to introduce the sulphate of cinchonidine among some of the Manchester medical men. Some personal friends had tried it, and he thought found it as good as quinine, but he supposed they forgot it again, for they soon went back to the latter.

Mr. Payne (Belfast) knew that medical men in his district obtained the same effect from it as from quinine. He thought the best plan would be to introduce it into the Pharmacopœia.

Mr. Groves said the present high price of quinine might have the beneficial effect of forcing more attention to neglected cinchonidine. It would be interesting to know what became of the necessarily large supplies of cinchonidine which must be left with the makers of quinine.

Mr. Savage mentioned that a public institution in Brighton had adopted sulphate of cinchonidine in place of quinine at his suggestion.

Mr. Gerrard (University College Hospital) said that some time ago amorphous quinine had been introduced into that hospital, but had to be abandoned because it was found to have emetic as well as tonic effects.

Mr. Plowman (St. Thomas's Hospital) said that in that institution sulphate of cinchonidine had largely taken the place of quinine. It was understood that it was always used except in cases when the specific effects of quinine were required. When quinine was to be used in dispensing the prescription was underlined. They now used nine or ten times as much sulphate of cinchonidine as of sulphate of quinine.

Mr. Maitland (Devonport) had had the experience of several illnesses during the past 40 years, and had found that sulphate of cinchonidine was the best of all the cinchona alkaloids. Cinchonidine with iron did not, with him, produce the headache and constipation which frequently resulted from the quinine salt.

Mr. Siebold urged that all the members of the Conference should leave the room determined to use their every influence to promote the adoption of cinchonidine. The non-success hitherto was due to the fact that the efforts to introduce it had been isolated.

Mr. Schacht wished to protest against any such resolve. It best became pharmacists always to recommend the best thing, and although, perhaps, these alkaloids had been too much disparaged, there was a consensus of evidence to the effect that quinine was the best of all ("No, No)," and he thought no physician, for the sake of saving the fraction of a penny per dose, should give a medicine at all inferior.

Mr. Lawson Tait, F.R.C.S. (Birmingham), after a long experience with two hospitals and in private practice, was quite certain that he got results from a decoction of cinchona which were not obtainable from any of the alkaloids. In cases of ague quinine was as good as cinchona, and cinchona was as good as quinine; but where a tonic was required, he was confident that quinine was not nearly equal to the decoction of cinchona. He had made the experiment over and over again, until he was quite tired of repeating it.

Dr. Paul said so much bark was now coming into the country containing not more than 1 per cent. of quinine that Mr. Schacht's objection ought not to be too much insisted upon.

Dr. Redwood said there was considerable evidence that many medical men preferred the cinchona bark to any special alkaloid, and he therefore suggested the introduction of the combined alkaloids under some distinctive name, as recommended by the Indian Government Commission.

Mr. Williams said such a compound did exist under the name of Quinetum, manufactured by Mr. Whiffen, a well-known quinine maker. Consequently, the profession had the opportunity of testing the combination if they so desired.

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The next paper was read by Mr. Baden Benger:—

## Notes on an Impurity in Oxide of Zinc.

*By W. W. Stoddart, F.C.S., &c., Bristol.*

The author said that a few weeks ago he received a sample of oxide of zinc for analysis. It was bought for mixing with white lead as a paint, but on being ground was found to be nearly useless. It would not readily combine and form a homogeneous mass as usual, nor would it give the "body" required. In fact, it was so unsatisfactory an article that it was laid aside and another used in its stead. Some objection was raised to its being returned, which induced the firm to have it examined, and the cause of failure ascertained.

This sample of oxide answered well to all the pharmacopœial tests for pure oxide of zinc, and yet was impure to the extent of nearly 10 per cent.

The sample was nearly white, with a very slight buff tint, like the pure oxide: it became a very strong yellow when heated, regaining its former whiteness when cold. It was perfectly and easily dissolved in an excess of carbonate of ammonia and the alkaline hydrates. From the alkaline solution a white precipitate was produced by sulphide of ammonium. It dissolved without effervescence in dilute nitric acid, and was so little affected by chloride of barium that after standing for several minutes the milkiness was so slight as to require a close scrutiny for its recognition.

If, however, the solution in nitric or hydrochloric acid be made in a flask, a strong odour and copious evolution of sulphurous acid gas became very evident.

A few grains were placed in dilute hydrochloric acid with a small piece of pure zinc, when sulphuretted hydrogen was evolved, and speedily became evident with the help of a bit of lead paper.

The addition of chlorine water produced an abundant precipitate of sulphate with chloride of barium.

The use of nitroprusside gave a red colour with a little of the solution to which a little soda and acetic acid had been added.

An analysis showed that the sample was composed of oxide and sulphide of zinc in the following proportions:—

| | Parts |
|---|---|
| Oxide of zinc .. .. .. .. .. .. .. | 90·87 |
| Sulphite of zinc .. .. .. .. .. .. | 9·13 |
| Sulphate of zinc, a very slight trace .. .. .. | — |
| Total .. .. .. .. .. .. .. | 100·00 |

The trace of sulphate was so small that it was probably due to oxidation of the sulphite. The cause of the presence of sulphite of zinc is not quite apparent, but the sample came from a continental house, and was very likely manufactured from a sulphide of zinc in some rapid and imperfect manner, which had partially oxidised some of the sulphide and produced the impure product of which complaint had been made. The appearance of the sample suggested a process by heat rather than by precipitation.

Professor Redwood said such an impurity was quite new to him.

Mr. Williams said it must be accidental.

Professor Attfield said the oxide was often made by roasting the native sulphide, and it was very difficult to remove all the sulphide.

Professor Redwood thought native sulphide was too much contaminated with iron and manganese. Was there an artificial sulphide manufactured?

Mr. Williams said such a product was made in large quantities for vulcanising indiarubber, but he thought that would be too expensive.

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Mr. Benger then read the following:—

## Supplementary Note on the Assay of Opium.

*By B. S. Proctor, Newcastle-on-Tyne.*

The process described at the last meeting was recommended as combining accuracy with speed, and a further modification was detailed, by which percolation of spirit through the opium was expedited.

The treatment of intractable samples was next considered, and the conclusion arrived at that the process already proposed, with the addition of a second solution of the morphia in spirit and acid and precipitation by ammonia, was better than any other modification which had been tried.

At the last conference an objection was raised by Mr. Cleaver to Mr. Proctor's mode of analysis, as not including an estimate of the morphia washed away by the washing water, which Mr. Cleaver stated to be equal to 1 part in 1,000. Mr. Proctor now replied with evidence that the washing water only contained about 1 part of morphia in 7,000.

The most important suggestion in the paper was that the pharmacopœial standard should be changed to 10 per cent. of morphia, calculated on the dry opium, with the latitude of a fraction only more or less, instead of the present standard, which admits the use of opium both of poorer and richer quality than is desirable.

Dr. Paul made a few remarks on this, but no other discussion followed.

### Sugar in Pharmacy.

*By Charles Symes, Ph.D., Liverpool.*

The author remarked on the scantness of the pharmaceutical literature of sugar, and thought that as a pharmacopœial article it should not be considered so insignificant as to be unworthy attention. Sugar had several functions in pharmacy. It was an adjunct, accessory, or excipient; it increased the activity of medicines by mechanical division, as in the case of calomel; it entered into chemical combination, as with liquor calcis sacch. and the less known iron compounds (see Dr. Gladstone's paper, *Journ. Chem. Soc.*, vii. 195). It acted as a preservative, as in ferri carb. sacch., and formed one of the best media for the administration of nauseous medicines. Its preservative powers were retained only so long as it was chemically unchanged, the first appearance of fermentation destroying them.

In the choice of sugar for pharmaceutical purposes purity was the first requisite, and was easily obtained. The makes of Say, Tate & Son, and the Eastern Sugar Refinery, Boston, were of about equal purity. They yielded ash equalling from 6 to 12 per 10,000 of calcium and potassium salts, and only a mere trace of glucose. The prejudice against the use of beetroot sugar was due to the greater impurity of the crude product and the occasional presence in the refined article of traces of volatile oil and potassic nitrate. The latter impurity gave rise to a trace of nitric acid, which in many cases acted as a decoloriser.

When thoroughly refined, beetroot sugar was fully equal to cane sugar; in fact, Say's lump, a standard of purity in the sugar trade, was for many months in the year prepared from beetroot sugar alone.

Some druggists used large crystals, under the impression that this was the purest form, but the author had not found this to be the case, and the large crystals were less soluble than the small ones.

Solubility was an important quality. When sugar is heated continuously in the presence of water, the first change of fermentation, that from sucrose to glucose, takes place, and though active fermentation does not necessarily follow, it becomes more easy. With a very soluble sugar, simple agitation in the cold would produce a syrup of the requisite density, but in any case it was best to add the sugar to the water already boiling, and so to avoid the long exposure to heat required in gradually warming them together. Syrups containing acids were much more readily inverted, but the power of acids in inversion was various. The following table of the invertive power of acids at different atmospheric temperatures was published in 1874 by Arno Behr. The action of hydrochloric acid was taken as the standard, 100·00 :—

*Inverting Power of Acids on Sucrose.* (Arno Behr.)

| Acids | 211 hrs. at 13°–18° C. | 115 hrs. at 19°–27° C. | 78 hrs. at 25°–27° C. |
|---|---|---|---|
| Acetic .. .. .. .. | 1·2 | 1·3 | 1·6 |
| Butyric .. .. .. | — | 1·9 | 2·5 |
| Isobutyric .. .. .. | — | 2·2 | 2·5 |
| Succinic .. .. .. | — | 3·5 | 4·0 |
| Malic .. .. .. .. | — | 8·1 | 8·8 |
| Citric .. .. .. .. | 8·2 | 9·2 | 10·2 |
| Formic.. .. .. .. | — | 9·2 | 9·6 |
| Lactic .. .. .. .. | 10.2 | 10·4 | 9·9 |
| Tartaric .. .. .. | 11·4 | 13·4 | 13·8 |
| Phosphoric .. .. .. | 24·2 | 25·8 | 26·9 |
| Oxalic .. .. .. .. | 49·6 | 53·1 | 54·5 |
| Sulphuric .. .. .. | 83·9 | 83·1 | 84·2 |
| Hydrochloric.. .. .. | 100·0 | 100·0 | 100·0 |
| Nitric .. .. .. .. | 100·1 | 100·4 | 100·1 |

Thus acetic acid had the least and nitric acid the greatest inverting power. Phosphoric acid stood high in the scale. As a rule the inverting power seemed to increase with the temperature.

Dispensing bottles for syrups should be carefully cleansed each time before refilling. The continental plan of filling the syrups into half-pint bottles, keeping in a dark cool place, and taking them one at a time into the dispensary, was a very good one. The bottles were not refilled, but replaced. When a new batch of syrup was added to a small quantity of old there was a great chance of the whole being reduced to the standard of the old.

Syrups which were rarely used, as of roses and saffron, could be conveniently extemporised by making a concentrated solution of the drug, filtering it upon powdered lump in an evaporating basin, evaporating to dryness, with constant stirring, and powdering the residue. The powder would keep for years, and a clear syrup could be readily prepared by shaking it with the required quantity of water.

The usefulness of sugar in preserving solutions of ferrous salts from oxidation was probably due to the fact that saccharated water contains less air than distilled.

Dr. Redwood said this subject was very enticing, but he almost feared to invite discussion on it, as the time was so short. He would, however, be glad to hear any remarks if any gentleman had such to make.

Dr. Oxland (Plymouth), as an old sugar refiner, wished to say that as fine sugar was made in this town as Finzel's. The continental makers often used ultramarine to disguise the imperfect refining of their sugars. English makers would consider such a course *infra dig.* The speaker claimed to be the first refiner who had used beet exclusively for the production of loaf sugar. This he had done by the employment of superphosphate of alumina instead of blood for defecating the juice. Formerly only about 50 per cent. of beet could be employed. He thought beet yielded sugar in every respect as good as cane, though he could always distinguish it by the crystals, the beet being about double the length of the cane, which were more square.

### The Approximate Principles of the Narcissus Pseudo-Narcissus.

*By A. W. Gerrard, F.C.S., Demonstrator of Materia Medica to University College.*

The natural order Amaryllidaceæ, to which the plant forming the subject of the author's notice belongs, has a reputation for producing many plants of a poisonous character. As an instance, he drew attention to the *Hæmanthus toxicanus*, said to be used by the Hottentots for the purpose of poisoning their arrow heads. As members of the above order were readily obtainable in this country, and our knowledge of their composition and physiological action being of a most meagre and unsatisfactory character, the author deemed them a subject worthy of investigation, especially as Professor Sydney had undertaken the physiological work.

The popular name of the plant examined is the daffodil. At the time the investigation was undertaken bulbs only were obtainable, and to these Mr. Gerrard's observations were confined. By preparing an alcoholic extract and removing from it some oil and resinous matters with ether, then treating the extract with caustic potash and ether, a residue was obtained, partly crystalline and of alkaline reaction. The crystals, which were very difficult to separate, proved not to be an alkaloid, but so far as their examination was carried are believed to be a neutral principle: the viscous matter, however, in which the crystals were embedded proved to be an alkaloid of well-marked reactions, which the author has provisionally termed pseud-narcissine. The whole of the alkaloid obtained was converted into a nitrate, and required at once for Ringer's experiments; so that no attempts were made to prepare from it crystalline salts of the various acids. A few drops of the pseud-narcissine nitrate, place on a watch-glass, yielded in about a week some indifferent granular-looking crystals.

From the exhausted parent-extract was obtained, by exclusion of other matters with alcohol, an ultimate residue of a saccharine character.

Professor Ringer's experiments show that, administered hypodermically to warm-blooded animals, it causes profuse salivation, with running at the eyes and nose, also free vomiting and slight diarrhœa. On man, administered by the mouth, it acts as on animals, producing salivation, occasionally tears, sickness, and diarrhœa: dropped into the eye it first slightly contracts and then dilates the pupil. These remarks apply to the alkaloid only: the extract in some respects is far more powerful; hence it is probable that the salivating principle, which is the alkaloid, and the principles which produce sickness and diarrhœa, and are contained in the extract, are totally distinct. These latter points will, if possible, be determined.

## WEDNESDAY, AUGUST 15.

(By Express and Telegraph.)

The business was opened this morning at 10 A.M. promptly by the subjoined paper, entitled—

### A Glance at the Materia Medica of Devon.

*By Edward Smith, F.C.S.*

This paper consists of an enumeration of the animal, vegetable, and mineral products of Devonshire which enter into the ateria medica. The lists are very complete, and occasionally teresting. Notes are given of special facts connected with e county. The paper, which is not suited for abstraction, ses with an account of William Cooksworthy, the discoverer of olin in England and the inaugurator of the hard china dustry.

Dr. Redwood thought the communication a very appropriate one, and commented on the special advantage which these Conferences produced bringing the members into acquaintance, not only with each other, but o with the materia medica of the districts in which the meetings occur.

## me Experiences in the Equipment and Working of a Small Pharmaceutical Laboratory.

*By G. F. Schacht, Clifton.*

ie object of this paper, the author said, was to show at how nall a cost very efficient appliances might be got together and orked for the home manufacture of preparations which too iny pharmacists, he thought, were content to purchase.

He could not bring round the laboratory itself, but he substituted me excellent representations of it, carefully drawn to scale by s present pupil, Mr. John Tatham Thompson, and explained o various prices of apparatus, their sizes and arrangements, gether with their cost and the expense of working them.

His laboratory, he said, occupied a space of 10 feet long by feet, and filled up all the available space of his back yard.

Dr. Redwood said the fitting up of a laboratory was a subject like the ntilation of a room—one on which everyone thinks he has specially luable ideas. As far as he could judge Mr. Schacht had made the best ssible disposition of his space. But he had had the advantage of build- g his laboratory. Others had frequently to adapt their apparatus to a om already built. His (Dr. Redwood's) impression was that, as a rule, it is not desirable to attempt to do so much in a small space.

Mr. Greenish spoke of the pharmaceutical laboratories of Germany and ssia. Formerly there was a law in Germany compelling every phar- acist to have a laboratory. Within recent years, however, the law had en somewhat relaxed, and now the pharmacist was only required to arantee the purity of his preparations, whether made by him or by other nufacturers.

Professor Attfield said that in the "Year-Book" for 1871 there was a per by Mr. Staples describing a form of apparatus to be adapted to a chen boiler.

Mr. Siebold said it was certainly the case that German pharmacists had a large extent abandoned the manufacture of chemicals. And why was is so? It was that they had found that it was by no means wise to make ese preparations on a small scale.

Dr. Symes did not entirely agree with Mr. Siebold. The lack of original search by English pharmacists had often been noted, and it was fre- ently the case that the most interesting papers in the English journals voted to pharmacy were obtained from foreign sources. By a more neral home manufacture of preparations experience would be gained, and proved processes would be arrived at. It was to be remembered that e testing of chemicals would occupy considerable time.

In a short paper Mr. N. H. Martin drew attention to the lue of Diphenylamine as a test for nitric and nitrous acids. r. Martin showed the reaction. A small quantity of the emical, the size of a mustard seed was, put in a test tube, a tle sulphuric acid (about 1 drachm) poured over it, a few ops of water added to it to develop heat. A single drop of solution containing 1 drop of nitric acid in a pint of water as added to the test liquid, and instantly a distinct blue was veloped.

## he Pill Masses of the B. P. which are of an Inconvenient Consistence or Acquire that Condition by Keeping.

*By J. C. Thresh, Buxton.*

he author said there were seven B.P. pill masses which re- iired some modification in their formulæ, as they either had acquired a consistence unsuitable for dispensing.

Pil. aloes et assaf. should have the amount of soap increased 1½ ozs., and the conserve decreased to ½ oz., when a good ass was formed.

Pil. phosph., though in some respects objectionable, was rhaps as good a form as any yet proposed.

Pil. aloes et ferri could be made into a good keeping con- stency by making up with powdered tragacanth and glycerine. he same remark also applied to pil. ferri carb.

Tho pil. coloc. co., pil. aloes et myrrhæ, and pil. cambogiæ co., ere best made up with Proctor's excipient (a mucilage of traga- nth, made with glycerine and water). He exhibited a number samples of pill masses which had been made with the traga- nth excipients, and all were in excellent condition.

Various formulæ were proposed, so as to make the pill masses prepared with these excipients correspond in strength with the official pills.

Experiments made with various kinds of aperient pills made up with tragacanth and glycerine and other excipients showed that the former were equal in activity to the latter.

Dr. Redwood said there was no doubt that it was desirable to have excipients which would allow pill masses to be kept for a reasonable time without getting hard.

Mr. Greenish remarked that pills made up with tragacanth and becoming hard were not, perhaps, necessarily insoluble.

Dr. Symes took exception to Mr. Thresh's statement in favour of the pil. phosph. of the B.P. His idea was that it was the worst possible form of phosphorus pill mass.

Dr. Redwood defended the Pharmacopœia form, explaining that it was not intended to be administered as it was, but with soap.

Dr. Symes thought it was desirable that this should be known, and

Dr. Redwood admitted that it would have been better to have added the explanation to the formula.

## A Point in Pharmaceutical Ethics.

*By S. R. Atkins, Salisbury.*

The author said that it was a patent fact that the relations of pharmacists to medical men were at present very unsatisfactory. The extreme sections of the parties were taking violent measures, and there was little chance for the moderates to get a hearing. A good understanding had previously existed between some at least of the two bodies, but this was now in danger of being destroyed. At the same time, it was almost impossible that any cordiality should spring up during the present conflict.

The author would defend simple counter practice, understanding by that the administration of simple medicines for simple diseases. Anything beyond this, such as private consultations or visiting patients in their own houses, he thought unjustifiable. Simple counter practice is a necessity for the welfare of the people, and it is preposterous to imagine that any Act of Parliament could make it illegal. The author thought that the action of pharmacists at the present crisis should be prompt and dignified. It was the duty of the Pharmaceutical Society to take efficient means to decide the real state of the law on this question. A clear, honest, honourable case should be selected and taken into court as a test. Should the decision of the lower courts be against us, it should be taken before the higher ones, and if necessary an appeal should be made to the House of Lords. Should this course prove that counter practice is illegal, immediate steps should be taken to obtain a repeal of the law, on the ground of injury and danger to the public weal.

It is probable that this would be unnecessary, and that the lower courts would decide in favour of pharmacists. In the meanwhile active hostilities should cease during the trial of the test case, and mutual courtesies should be exchanged. It should be remembered that in this suit pharmacists have the advantage of being the defendants.

This paper was received without discussion. The firm maintenance of the right of chemists to carry on counter-practice was, however, received with loud applause.

## Preserved Foods and Copper.

A paper with this title, by Dr. Paul and Mr. Kingzett, excited a lively discussion. The authors had tested some of the French preserved peas in tins. They found that the tins contained each 1¼ grain of copper, the peas themselves weighing about 9½ ounces. In order to test the poisonous character of copper, the authors had themselves taken copper to the extent of 3 grains per day, and they found that it was nearly all passed in the fæces. The authors, therefore, considered that, supposing anyone consumed, say, 2 ounces of the peas at a meal, he would only take a fraction of a grain, and would only absorb a fractional portion of that. They would expect that the handling of copper coins would have an almost equal effect.

Mr. Siebold protested against the notion that because the copper was eliminated therefore no poisonous effect would be produced. He instanced iodide of potassium and other medicines as also being rapidly eliminated, but which had undoubted medicinal effects.

Dr. Paul said the instances were not analogous. The copper passed through the system without being absorbed at all.

Dr. Rowe (Redruth) mentioned some instances from his own neighbourhood where streams, largely contaminated with copper, were indiscriminately drunk by the population. In one case there was sufficient copper in the water to pay for its extraction; in another instance there was no less than 16 grains to the imperial gallon.

Mr. Wm. Thompson (Manchester) had for a long period given to a dog 1 grain of sulphate of copper per day in his food, with no unfavourable results. Some amusement was caused by Mr. Thompson adding that he had spared the dog his daily dose on Sunday.

Mr. **Chipperfield** (Southampton) remarked that in the neighbourhood of copper works, while vegetation was almost entirely destroyed and copper could be distinctly tasted in the air, it was a fact that the residents were remarkable for longevity.

Other comments were made by Mr. Stokes Dowson, Dr. Wright, Dr. Macadam, Mr. Groves, and Mr. Robbins.

Dr. **Redwood** said that he had been rather prominently engaged in the prosecution of some of the dealers in these preserved peas contaminated with copper. He should be inclined to say that the case which had been brought forward was rather overproved. He mentioned cases which pointed unquestionably to poisonous effects from copper. He (Dr. Redwood) was not prepared to say that a dealer was justified in supplying peas prepared with a substance which had an effect which was not necessary, and which was probably dangerous. If they were supplied, he thought they ought to be labelled "peas preserved with sulphate of copper." He had found two grains of copper in each tin.

## ANALYSES OF PRESERVED CARROTS, POTATOES, CABBAGE, AND MIXED VEGETABLES.

*By Professor Attfield.*

This paper recorded a series of experiments made by the author at the request of the Chairman of the Admiralty Committee appointed to consider the causes of the outbreak of scurvy in the recent Arctic Expedition. The samples of vegetables tested were taken from the residual stores of the *Alert* and the *Discovery*. In introducing the paper, Professor Attfield pointed out that the question as to the influence of desiccation on vegetable matter was interesting not only in regard to edible vegetables, but also from a pharmaceutical point of view in regard to the preservation of herbs, &c. It is probable that little actual chemical alteration occurs if the portion of the plant to be dried be perfectly sound and fresh, be at once and rapidly dried at a moderately low temperature, or be quickly subjected to the selected process of preservation before any fermentative action can commence. It is possible, though, that certain alkaloids may be chemically affected. It was also pointed out that contusion of fruits, stems, &c., may occasion a loss of juice. Such a process would be likely to interfere with the medicinal properties of herbs or with the alimentary value of vegetables.

The samples analysed were found to be all in good condition, both as regards flavour and appearance. The carrots were found to represent very accurately the normal constituents of fresh carrots. The only noticeable difference was that the carrots as tinned, compared with fresh carrots, contained only 0·43 per cent. of "alkalies," instead of 0·59 per cent. The water in the tins was, however, rich in alkalies, and this was thought to fairly account for the deficiency.

The dried potatoes contained all the chief components of the sound normal vegetable, and contained them in natural proportion. One pound of these dried potatoes represented 3½ pounds of undried potatoes. Not only were the potatoes chemically good, but their general condition was excellent. No trace of mouldiness, sourness, or other undesirable quality could be detected.

The compressed cabbage was not quite so satisfactory. Analysis showed that while the vegetable constituents were in good proportion, there was considerable deficiency of mineral matter, especially of the saline material termed alkaline phosphate. The dry mineral matter was 0·64 per cent., instead of 1·2, which is the average proportion. Of this, too, half should be "alkalies," while in the sample only about one-third was of this character. The phosphoric anhydride, also, was only present to about one-third of its normal proportion. The author did not profess to judge of the physiological import of the deficiency. He suggested that the cause of it might be pressure before drying, causing a loss of juice. This would exactly explain the facts revealed by analysis. One pound of the dried cabbage represented seven pounds of the fresh vegetable.

Messrs. **Smith, Umney, Balkwill** and **Wilmott** commented on this paper from a pharmaceutical point of view.

A paper

## ON THE TINCTURE OF THE ACETATE OF IRON.

*By Charles R. C. Tichborne, Ph.D., F.C.S., Dublin.*

was announced on the programme.

Professor **Attfield** said he had expected Dr. Tichborne all day, and was sorry he had not arrived. He had been reading over his paper, and found that Dr. Tichborne was in the position in which investigators often found themselves of having discovered something which had been discovered before. Dr. Tichborne had tried to obtain a tincture of acetate of iron which would keep unaltered, and after a number of very careful experiments he had hit upon the following formula:—

Take of

| | |
|---|---|
| Solution of persulphate of iron .. .. | 2½ fl. ozs. |
| Glacial acetic acid .. .. .. .. | 2½ fl. ozs. |
| Rectified spirits.. .. .. .. .. | 15 ozs. |
| Solution of ammonia a sufficiency. | |
| Water a sufficiency. | |

Add the solution of persulphate of iron, diluted with an equal bulk of water to an excess of the solution of ammonia, also diluted with its own volume of water, agitating the whole during the addition of the iron solution. Allow it to stand for about an hour, and then throw on to a filter and wash with distilled water until the washings no longer give an indication of ammonia. Allow the precipitate to drain well, press out any superfluous water, and add the glacial acetic acid. Allow it to stand 24 hours, or until perfectly dissolved, and make it measure 5 ounces by the addition of water if necessary. It is essential to the success of this formula that no heat should be used in any part of the process.

Now this was virtually the same formula as one which had been recommended by Mr. James Deane in 1869, and which was published in the "Year-Book" for that year. If Professor Tichborne were present, he (Dr. Attfield) was sure he would be the first to wish to withdraw his paper under these circumstances.

The paper was, therefore, not officially presented.

## EFFECTS OF VARIATIONS OF TEMPERATURE ON BOILED PUTRESCIBLE LIQUIDS.

*By W. Willmott, King's College Hospital.*

The investigation embodied in this paper had special reference to the much vexed controversy concerning the germ theory and spontaneous generation. The question of the possibility of life being evolved from dead matter is, remarked the author, of the deepest interest, not only to the scientific physician, but to the chemist, the physicist, and, perhaps, above all, to the biologist. To solve this question the method of experimentation almost uniformly adopted consists in the employment of certain putrescible infusions and other liquids in which bacterial life in its many forms is well known to appear in conjunction with any fermentation or putrefactive change which such liquids may be allowed to undergo. If, in a freshly prepared infusion, after it has been boiled and protected from contamination, bacteria make their appearance, it is conjectured by the advocates of spontaneous generation that they must have arisen *de novo* from "molecular arrangements of the atoms of dead organic materials."

Of the many eminent experimenters who have dealt with this subject, by far the most conspicuous is Professor Tyndall. He has gone over the ground in great detail, but his results are by no means unreservedly accepted, the objection being entertained that he denies the conclusions of other observers, "mainly on the strength of his own unconfirmed experiments." It was this circumstance which for the most part induced the author to branch off from the inquiry he was some time since pursuing, to supply, so far as the means at his command would permit, a corroboration, or the reverse, of the Professor's ably achieved results. Reference had been made to *temperature* as being an important consideration in this inquiry, and it was so in the highest degree. The ranges of temperature which the author employed in working out his conclusions were chiefly the following:—130° to 160°, 90° to 110°, and 60° to 80°, all on the scale of Fahrenheit. Different results were often obtained with the same infusion at these several temperatures, and it was desirable therefore to connect them all closely in the inquiry.

After expressing an opinion on different methods of isolation, the author described experiments with hay, gentian, calumba, turnip, cucumber, &c. Cucumber was one of Professor Tyndall's most refractory "witnesses," but, nevertheless, was found to be amenable to even a few seconds' boiling by neutralising with magnesium carbonate in the place of the usual solution of potash. Old hay was next referred to, and the methods of dealing with it fully described. This substance gave an infinity of trouble, and could not be sterilised by the usual five minutes' boiling; but was ultimately conquered by placing the infusion for six days in a temperature ranging from 130° to 160° Fahr. By this means the indurated germs were ultimately destroyed, and the liquid thereby reduced to a condition of permanent barrenness. Professor Tyndall's hypothetical rod was next lluded to, together with the causes influencing sterilisation, ables being given showing the results of experiments with trong and weak infusions respectively.

After referring to the plan adopted in dealing with an bstinate mixture of "turnip and cheese," a favourite combina- ion for the rapid development of bacterial life, the author ntered fully into the subject of the recent dispute between Dr. Bastian and M. Pasteur, and finally proposed the entire aban- lonment of boiling as a method of sterilisation, and the sub- titution in its stead of continuous heating at a lower point on ho scale. As Dr. Bastian has clearly demonstrated the exact emperature necessary for the destruction of bacteria and acteria germs, it follows irresistibly that by continuing the equired degree of heat for a sufficient length of time the most ndurated and resistant germ will ultimately succumb and ease to be. If, after this, life cannot be reinstated in the terilised fluid without contact with fresh sources of vitality, it ay perhaps be said of spontaneous generation as Macbeth aid of his immortal dagger, "There's no such thing." All the uthor's experiments tended in this direction, and subsequent nvestigators would probably find the result foreshadowed to hem in the old Latin proverb, *Ex nihilo nihil fit.*

Dr. REDWOOD said the author had certainly thrown a new light on a bject of great interest by indicating that the time during which the heat as applied was an element of importance, as well as the degree of heat.

Mr. KINGZETT thought the paper threw no new light on the subject. e deadlock now reached was owing to the discovery of Mr. Dallinger that he application of a certain temperature would kill the germs, but not the pores.

Mr. WILLMOTT replied that the fact which he claimed to have established as independent of Mr. Dallinger's observations. If the heat were applied ong enough it would kill not only the germs, but the germs of the germs.

## TEA HAIR.

*By Thomas Greenish, F.C.S., London.*

THE author said it appeared that tea hair found its way into this country as an article of legitimate commerce at tolerably regular intervals. Its commercial name was "Pekoe Flower," and sometimes "Bloom of the Pekoe Flower." It was a product of Indian teas, not of those of China. It was purchased somewhat as a curiosity, but some bought it regularly. It was never sold as tea simple, or for mixing with tea for sale: it was almost a necessity that it should be sold alone, for if it were mixed with ordinary tea it had such a tendency to separate and agglomerate into lumps, that any attempt of this kind would most probably result in the whole being returned as an adulterated tea.

In an essay on the cultivation and manufacture of Indian teas by Lieutenant-Colonel Money, published in Calcutta, the whole process of the manufacture of the Indian teas was given, and it was not difficult to trace to its cause the condition in which this tea hair was found in commerce. One part of the process consisted in what was called "rolling" the leaves, when the juice was given out freely; and as to its results on the leaf and its hairs, Money says, "If the leaves which give Pekoe tips are separated from the other leaves and rolled very little and very lightly, there will come out Pekoe tips of a whitish colour; if not separated from the other leaves, but manufactured with them, the sap from the other leaves expressed in the rolling stains those said leaves which are covered with a fine silky down, and makes them look like the rest of the tea." This was evidently the part of the process in the manufacture of Indian teas which gave to the otherwise greyish white hair its brown colour, and also that extractive matter which was found adhering to it.

Mr. Wigner, in his analysis of the tea hair, gave theine 1·5 per cent., as compared with 3·5 per cent. for Pekoe tea, and Mr. Groves remarked in reference to this that "it was interesting to find theine present in the tea hair." The author doubted the correctness of this conclusion, and by several qualitative experiments satisfied himself that the theine found by Wigner was derived, not from the tea hairs, but from the extractive adhering to them.

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Mr. KINGZETT gave the leading points of a paper on scammony root, the chief conclusion from which was that it contained no alkaloid.

Time was now nearly exhausted, and the discussions were, therefore, somewhat cut short.

Mr. Siebold read the next paper,

## ON COPAIBA TESTING.

*By Louis Siebold, Manchester.*

MR. SIEBOLD said that most of the tests for copaiba described in standard works on materia medica and pharmaceutical chemistry were utterly fallacious, and it was high time that this should be generally understood. Those tests were applicable to certain kinds of balsam only, and the fact of their being mentioned in works of high repute without an explanation of their merits, or rather their demerits, might easily lead astray chemists, and more especially public analysts possessing little or no personal knowledge of drugs. Owing to the exceedingly variable proportions of volatile oil and resin in different samples of copaiba, their specific gravity and general appearance must be equally variable. Benzol could not be used as an indication of purity, as the various adulterants of copaiba were themselves soluble in it, and one of them, for the detection of which it was principally intended, viz., gurgun balsam, or wood oil, was the more soluble in it the purer the benzol. Benzoline, however, would answer the purpose, as a mixture of one volume of balsam with four volumes of this liquid would, after half an hour's settling, deposit a bulky sediment if gurgun oil were present, whereas a pure balsam thus treated would either form no deposit at all or an exceedingly slight one. Flückiger's test, bisulphide of carbon and a mixture of sulphuric and nitric acids (see "Pharmacographia," foot note on page 206) was also a very good one. Fluorescence could under no circumstances be regarded as an indication of adulteration, as many samples of genuine balsam possessed that property. The magnesia test which had been recommended for the detection of fatty oils, and also of gurgun balsam, was entirely fallacious, as the power of dissolving a given weight of magnesium carbonate must depend on the amount of acid resin present, which was exceedingly variable in different samples. For the same reason the ammonia test, too, was useless. The property of forming a perfectly clear mixture with three volumes of absolute alcohol was not possessed by many genuine samples of copaiba, and especially not by Para balsam; but an experienced manipulator might nevertheless be able to detect an admixture with fixed oil, by means of alcohol, from the nature of the deposit formed after standing. The simplest and best plan for detecting such an admixture consisted in the evaporation of a small quantity of the balsam on a watch glass, for in the presence of fatty oil the remaining resin would not be brittle. If it were pulverisable the balsam was certainly quite free from fatty oils. He did not like Dr. Muter's test (which was published in THE CHEMIST AND DRUGGIST, December 15, 1876). As a qualitative test it was much inferior to the one just named, and for quantitative purposes it was far from being so accurate as Dr. Muter seemed to consider. He (Mr. Siebold) had tried it most carefully with different samples of balsam, and various proportions of linseed and castor oils. As regarded an adulteration with oil of turpentine, he relied for its detection on the great difference between the boiling points of this oil and the oil distilled off from copaiba. The first few drops of oil passing over during distillation with water or steam would consist mainly of the adulterant, which could be at once recognised by its odour upon heating a drop on a watch glass. He did not know of any other volatile oil that was likely to be used as an adulterant of copaiba.

Dr. REDWOOD said a good deal of what Mr. Siebold had stated was not new; many of his observations had been made by himself (Dr. Redwood) and published many years ago. He had concluded that the only really satisfactory way of testing balsam of copaiba was to separate it into its component parts. Mr. Siebold had simplified the process by the suggestion to separate the resin by evaporation. With regard to Dr. Muter's test Dr. Redwood agreed to a great extent with Mr. Siebold, and he considered that his examination of this test was a very valuable part of the paper. He was not, however, prepared to say that the test was of no use.

Mr. MANBY would like to ask Mr. Siebold what he considered the best vehicle for the solution of copaiba.

The PRESIDENT ruled that the question was outside the subject, but

Mr. MANBY insisted, remarking, amid laughter, that copaiba was an article of daily consumption among pharmacists.

Mr. UMNEY remarked on the great variety of samples of balsam in the London market. Some was offered only last week as limpid as turpentine; he had not found it easy to produce the brittle, pulverisable resin of which Mr. Siebold had spoken, and which had come into some demand on the recommendation, he believed, of Dr. Wicks.

Mr. MOSS said that the balsam spoken of was not put into the stock of the wholesale druggists, but was chiefly bought for the purpose of distilling the essential oil.

Mr. SIEBOLD, in reply to Mr. Manby, said the best solvent he knew of for copaiba was benzole. (Laughter.) With respect to the hard resin, he presumed that Mr. Umney had tried to extract it under water. The water seemed to get into the substance of the resin, and utterly to prevent the hardening process. If instead of boiling with water it were simply evaporated in a dish, the resin would be extremely brittle and quite easily powdered.

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## A NEW MEDICINAL SOLUTION OF PHOSPHORUS.

*By Mr. W. W. Urwick, London.*

IN consequence of the able paper by Mr. Williams on the administration of phosphorus, read before the British Pharmaceutical Conference in 1874, giving a formula for the solution of phosphorus in glycerine and alcohol, and pointing out that a portion of the phosphorus became oxidised during the process, the author was led to make one or two experiments with the desire to produce a formula, not liable to change, for the administration of phosphorus in known doses, and capable of being administered without admixture, if required. With this idea he prepared phosphorus pills, and coated them with a solution of albumen; but after a time the pills ceased to be luminous on testing them, showing that the phosphorus had disappeared, and was no longer present in the free state. Mr. Hampson suggested to him that the albumen had become porous by drying. Though at first foiled, feeling he was on the right track, Mr. Urwick thought it possible to make a solution that should be stable and should contain known doses.

He adopted the suggestions made by Mr. Williams at the British Pharmaceutical Conference, with the following modifications:—He dissolved 2 grs. of phosphorus in absolute alcohol and glycerine, at a temperature of about 170° Fahr., with the addition of a little cane sugar and sugar of milk, which addition prevented any portion of the phosphorus passing into an acid state during the time of solution. When the solution was cold he added the albumen of one egg, first mixed with a little glycerine and alcohol, and then sufficient glycerine to measure 10 ounces, the strength of the finished product being $\frac{1}{40}$th of a grain to the drachm, which is quite strong enough to admit of its being preserved a long time without change, and taken, if required, without dilution.

Some of this solution has been kept for more than two years without the phosphorus passing into the amorphous state, or the solution becoming acid or losing its luminous properties when agitated with water in the dark. In no case as yet has any change occurred except where the solution had been, for the purpose of experiment, exposed to the strong rays of the sun, day by day, for a period of nearly three months, when a slight trace of amorphous phosphorus became visible. So thoroughly does the albumen protect the phosphorus that when the solution has been mixed with water, and kept for a week, it still shows phosphorescence on agitation.

Wishing to make the solution somewhat more agreeable to the palate, the author added a few drops of oil of neroli to the albuminated solution of phosphorus, when, to his surprise, in an instant the solution lost its smell and flavour of phosphorus, and also its power of showing phosphorescence when mixed with water and agitated; indeed, the phosphorus seemed at once blotted out of existence, but blue litmus remained unchanged, pointing out that it had not been oxidised. The question, "How does the oil of neroli prevent oxidation?" was submitted to the Conference. On this point, at present, the author could give no satisfactory answer, but he found, on applying a strong heat to the solution with neroli, the peculiar ring-like fumes of phosphorus pentoxide were formed. This may not be a crucial test, but points to the fact of the phosphorus being held in the solution with neroli in a free state.

Yolk of egg deprives the solution of phosphorus of its luminosity, but still appears to hold the phosphorus in a free state. Indeed, the idea has occurred to the author that the phosphorus natural to the egg occurs in the free state. Possibly the oily matter in yolk of egg is the agent which absorbs the phosphorus from the author's solution. On adding excess of the solution to the yolk, its power of absorption is overcome, and phosphorescence reappears.

Tincture of orange at once destroys the phosphorescence, smell, and flavour, as does also tincture of gentian. With tincture of calumba, tincture of quassia, and tincture of nux vomica, the phosphorescence, smell, and flavour remain unaltered.

Essence of lemon deprived the solution of its phosphorescence, but the smell and flavour remained in a modified form.

Oil of cloves also deprived the solution of its phosphorescence, smell, and flavour; but on agitation with water, and then standing, flashes of phosphorescence appeared at intervals, similar to electric sparks, and on keeping for two days the phosphorescence reappeared to a slight extent, but soon passed away.

With orange-flower water the solution remains luminous nearly as long as with common water, retaining the smell and flavour of phosphorus. Milk destroys the phosphorescence, but the flavour and smell remain in a slightly modified state. Within this last week or two these points have presented themselves to his observation, but up to the present time the author has not been able to trace the chemical change, if any, that takes place in the phosphorus, or what combination it forms with essential oils or milk.

The formula referred to is as follows:—

| | |
|---|---|
| Alcohol .. .. .. .. .. .. .. | 1½ oz. |
| Cane sugar .. .. .. .. .. .. | ½ oz. |
| Sugar of milk .. .. .. .. .. .. | ¼ oz. |
| Phosphorus .. .. .. .. .. .. | 2 grs. |
| Glycerine to .. .. .. .. .. .. | 10 oz. |
| Albumen of one egg. | |

M. S. A.

After reading Mr. Urwick's paper, Professor Attfield showed some of the emulsion mixed with water. When the phosphoric fumes filled the bottle, the addition of a single drop of oil of neroli at once stopped the fumes and removed the phosphorus odour from the mixture.

A brief discussion ensued, in which Professor Redwood, Mr. Williams, and Mr. Greenish took part.

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The papers being concluded, Professor ATTFIELD read the names of some gentlemen proposed for membership. These being elected, the same gentleman moved that the Conference should next year meet in Dublin. It was a long way off, and there was a Channel to cross, and it was possible that not so many as were present then would go to Dublin. Still, he believed there was a general wish to meet there. He had information that the Irish Pharmaceutical Society was desirous that the Conference should meet there.

Mr. JOHN WILLIAMS seconded the motion. He had the more pleasure in so doing, since, on the last occasion of the British Association meeting in Ireland, they were disappointed through special circumstances in not being able to meet there.

Mr. J. C. PAYNE (Belfast) was very sorry to be the only Irish member present. He had hoped that Professor Tichborne would have been there, and he knew that he was charged on the part of the pharmacists of the City of Dublin to expressly invite the Conference. He (Mr. Payne) on the part of Irish pharmacists generally could promise the Conference a hearty welcome if they came.

The motion was then carried unanimously.

The following list of officers, suggested by the Executive Committee, was then submitted to the Conference and approved of:—

PRESIDENT.
G. F. Schacht, F.C.S., Clifton.
VICE-PRESIDENTS.
Prof. Tichborne, F.C.S., Dublin.
R. Reynolds, F.C.S., Leeds.
R. W. Pring, L.A.H.D., Belfast.
J. Williams, F.C.S., London.
TREASURER.
C. Ekin, F.C.S., Bath.
GENERAL SECRETARIES.
Prof. Attfield, F.C.S., London.
F. B. Benger, F.C.S., Manchester.
LOCAL SECRETARY.
W. Hayes, Dublin.

OTHER MEMBERS OF EXECUTIVE COMMITTEE.
M. Carteighe, F.C.S., London.
A. P. Balkwill, Plymouth.
H. N. Draper, F.C S., Dublin.
B. S. Proctor, Newcastle on-Tyne.
E. Smith, F.C.S , Torquay.
W. A. Tilden, D.Sc., F.C.S., Clifton
C. Umney, F.C.S.. London.
J. T. Holmes, Dublin.
J. C. Thresh, F C.S., Buxton.
AUDITORS.
S. B. Turney, Plymouth.
W. Allen, Dublin.

Mr. SCHACHT expressed his high appreciation of the honour done him. It would be affectation on his part to pretend that he had not contemplated the possibility of this position being offered him. At a distance the work did not seem particularly alarming, but now that it came near he felt the difficulty of following such a president as Dr. Redwood. He should have to rely very considerably on the indulgence of his friends. Mr. Schacht also proposed a vote of thanks to the local committee. This was seconded by Mr. Groves, and acknowledged by Messrs. Clarke and Balkwill.

Mr. TURNEY proposed and Mr. FRAZER seconded a vote of thanks to the president, and this being acknowledged the fourteenth annual meeting of the Conference came to an end.